2-Phase Hybrid Stepping Motor 1.8°

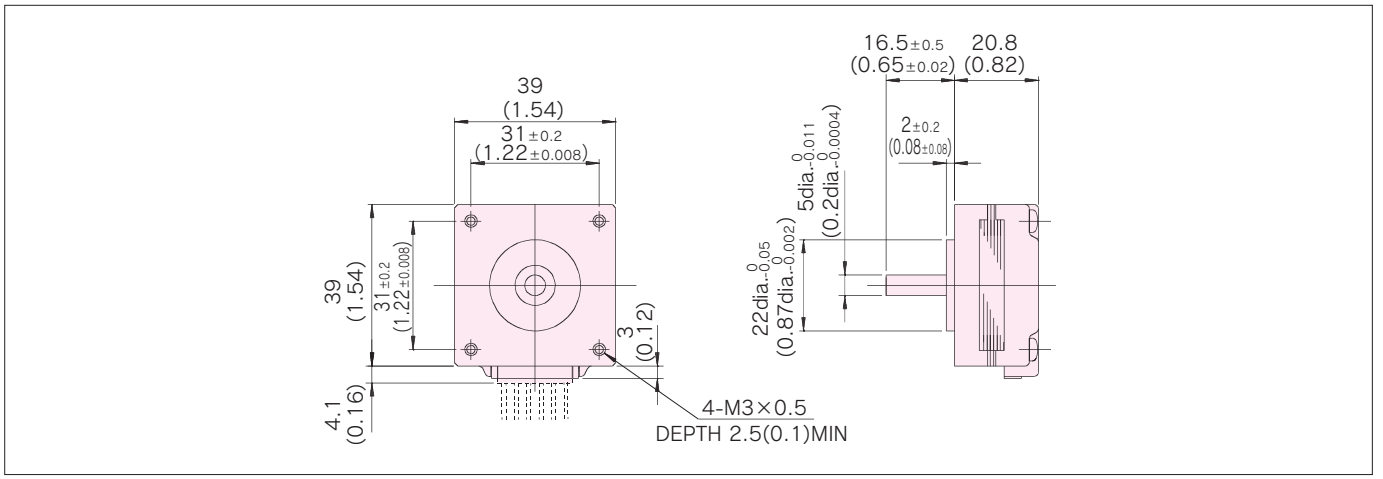
KH39 series

HIGH TORQUE, LOW VIBRATION AND LOW NOISE

■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KH39EM2	
		-801	-851
SHAFT	————	SINGLE	
DRIVE METHOD	————	UNI-POLAR	BI-POLAR
NUMBER OF PHASES	————	2	2
STEP ANGLE	deg./step	1.8	1.8
VOLTAGE	V	5.6	3.6
CURRENT	A/PHASE	0.4	0.6
RESISTANCE	Ω/PHASE	14.0	6.0
INDUCTANCE	mH/PHASE	6.4	5.5
HOLDING TORQUE	mN·m	59	78
	oz · in	8.3	11
DETENT TORQUE	mN·m	7.8	7.8
	oz · in	1.1	1.1
ROTOR INERTIA	g · cm²	14	14
	oz · in²	0.08	0.08
WEIGHT	g	110	110
	lb	0.24	0.24
INSULATION RESISTANCE	————	500VDC 100MΩmin.	
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.	
OPERATING TEMP.RANGE	℃	0 to 50	
ALLOWABLE TEMP.RISE	K	70	

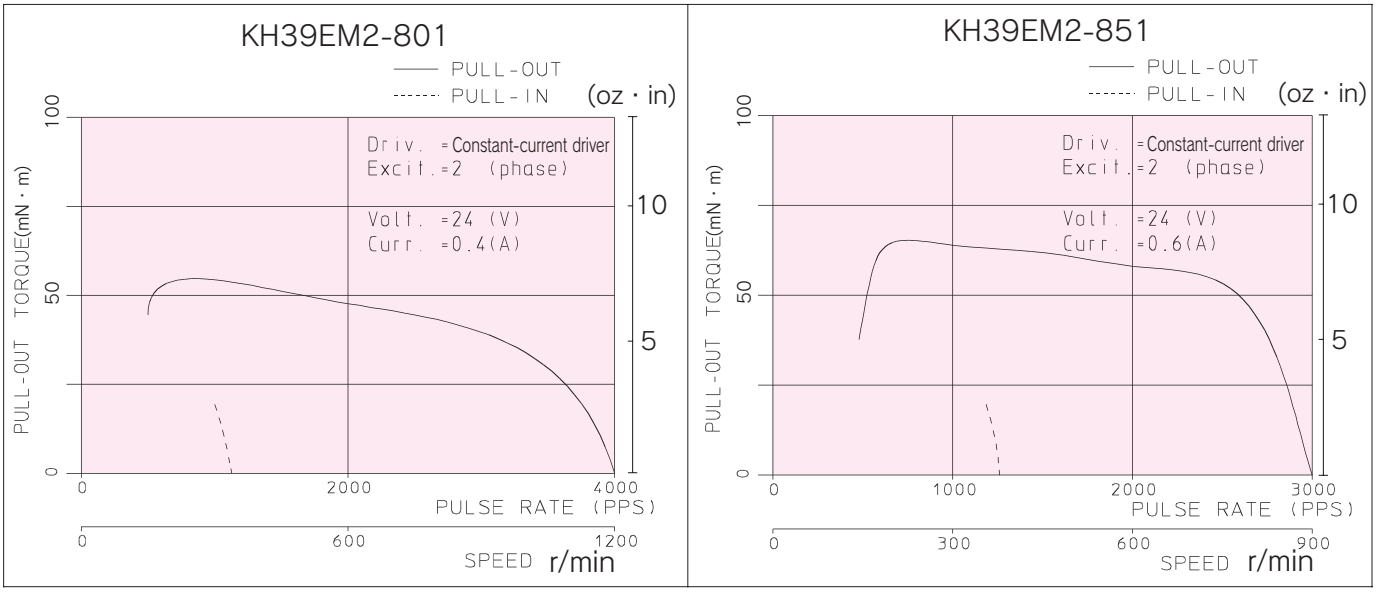
■ DIMENSIONS unit = mm (inch)



Features

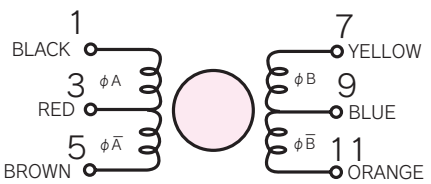
1. High torque
   Output is 1.3 times as high as conventional products.
2. Low noise -7dB(A)quieter than conventional products.

■ TORQUE CHARACTERISTICS VS PULSE RATE



■ CONNECTION DIAGRAMS

UNI-POLAR (801)

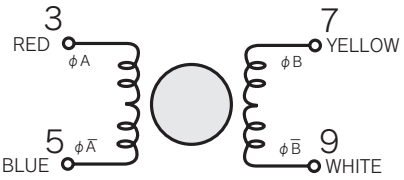


Excitation sequence

STEP	1	2	3	4
BLACK(1)	−			−
YELLOW(7)	−	−		
BROWN(5)		−	−	
ORANGE(11)			−	−
RED(3)	+	+	+	+
BLUE(9)	+	+	+	+

Rotation : CW

BI-POLAR (851)



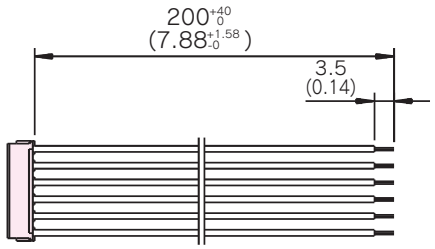
Excitation sequence

STEP	1	2	3	4
RED(3)	−	+	+	−
YELLOW(7)	−	−	+	+
BLUE(5)	+	−	−	+
WHITE(9)	+	+	−	−

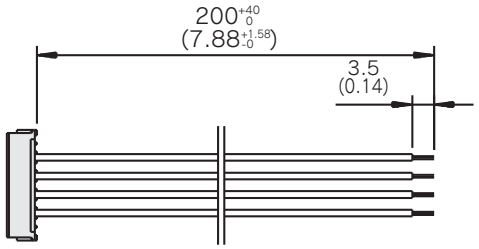
Rotation : CW

■ CONNECTION CABLE TO MOTOR unit=mm (inch)

UNI-POLAR



BI-POLAR



2-Phase Hybrid Stepping Motor 1.8°

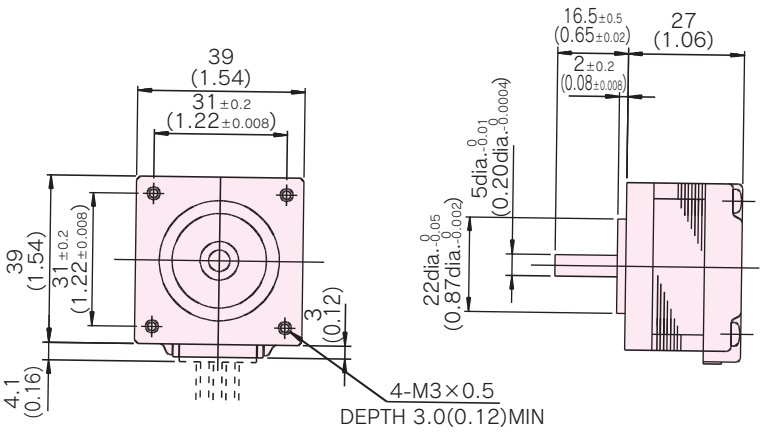
KH39 series

HIGH TORQUE, LOW VIBRATION AND LOW NOISE

■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KH39FM2	
		-801	-851
DRIVE METHOD	———	UNI-POLAR	BI-POLAR
NUMBER OF PHASES	———	2	2
STEP ANGLE	deg./step	1.8	1.8
VOLTAGE	V	6.3	4
CURRENT	A/PHASE	0.42	0.67
RESISTANCE	Ω/PHASE	15.0	6.0
INDUCTANCE	mH/PHASE	8.5	6.8
HOLDING TORQUE	mN·m	88	118
	oz · in	13	17
DETENT TORQUE	mN·m	9.8	9.8
	oz · in	1.4	1.4
ROTOR INERTIA	g · cm²	19	19
	oz · in²	0.10	0.10
WEIGHT	g	160	160
	lb	0.35	0.35
INSULATION RESISTANCE	———	500VDC 100MΩmin.	
DIELECTRIC STRENGTH	———	500VAC 50HZ 1min.	
OPERATING TEMP.RANGE	℃	0 to 50	
ALLOWABLE TEMP.RISE	K	70	

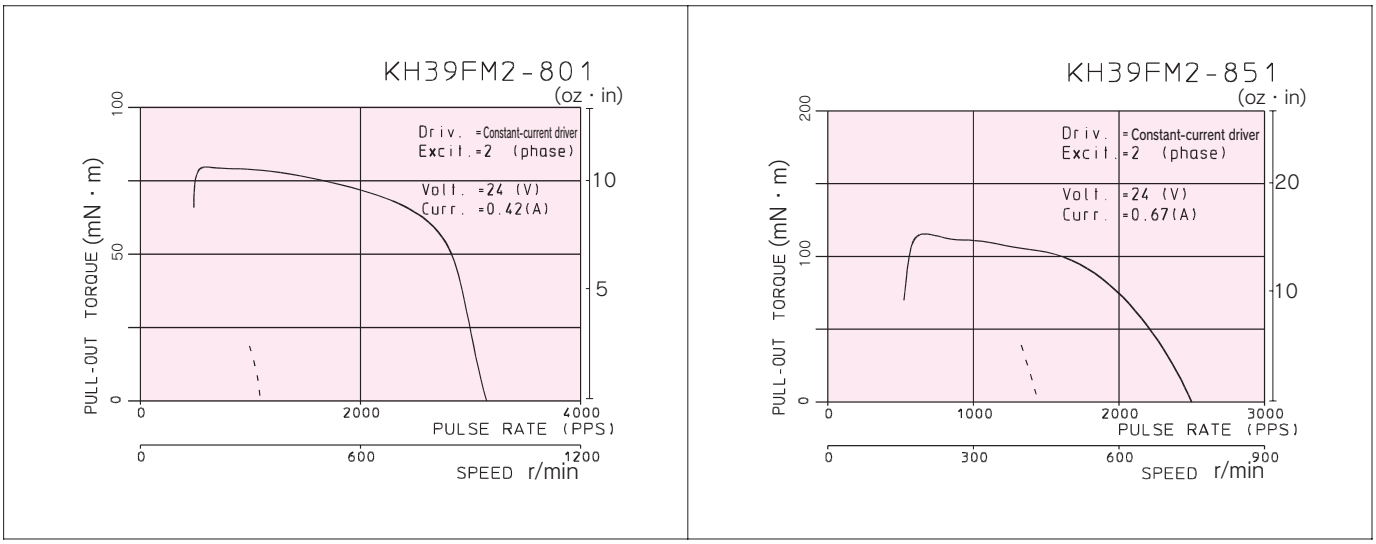
■ DIMENSIONS unit = mm (inch)



Features

1. High torque
   Output is 1.3 times as high as conventional products.
2. Low noise -7dB(A)quieter than conventional products.

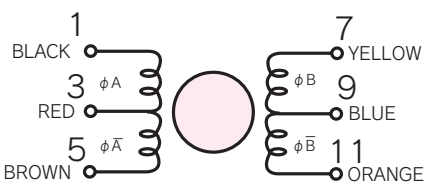
■ TORQUE CHARACTERISTICS vs. PULSE RATE



PULL-OUT
PULL-IN

■ CONNECTION DIAGRAMS

UNI-POLAR (801)

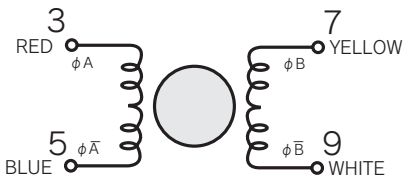


Excitation sequence

STEP	1	2	3	4
BLACK(1)	−			−
YELLOW(7)	−	−		
BROWN(5)		−	−	
ORANGE(11)			−	−
RED(3)	+	+	+	+
BLUE(9)	+	+	+	+

Rotation : CW

BI-POLAR (851)

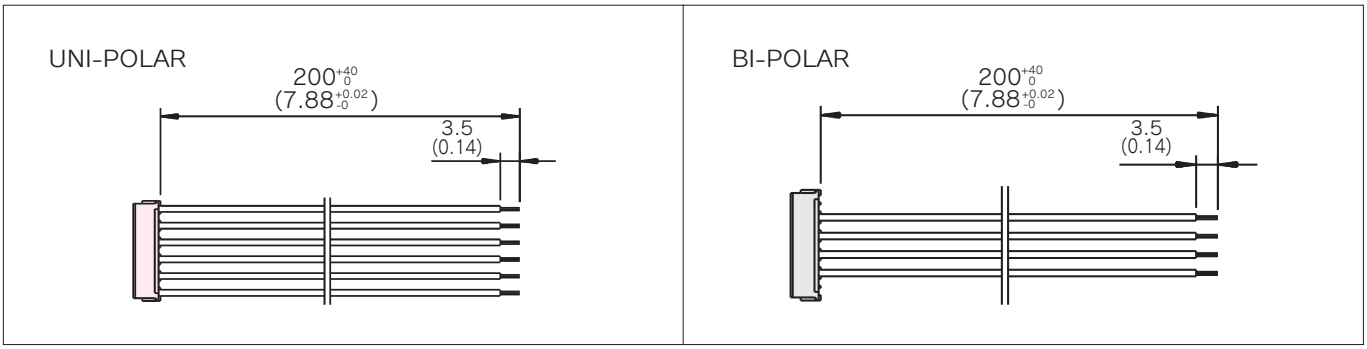


Excitation sequence

STEP	1	2	3	4
RED(3)	−	+	+	−
YELLOW(7)	−	−	+	+
BLUE(5)	+	−	−	+
WHITE(9)	+	+	−	−

Rotation : CW

■ CONNECTION CABLE TO MOTOR unit = mm (inch)



2-Phase Hybrid Stepping Motor 1.8°

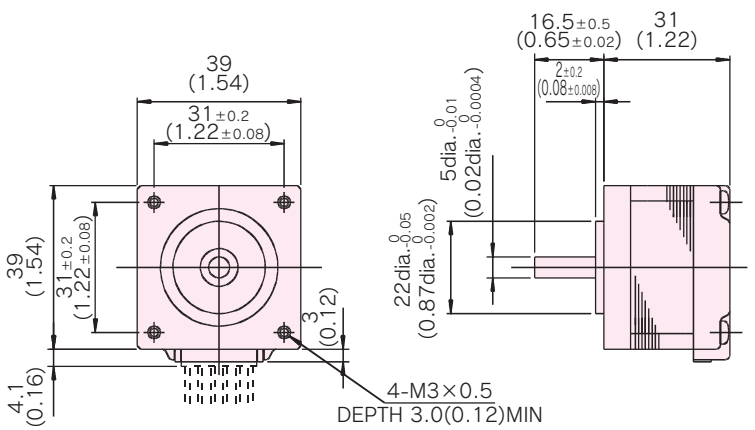
KH39 series

HIGH TORQUE, LOW VIBRATION AND LOW NOISE

■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KH39GM2	
		-801	-851
DRIVE METHOD	————	UNI-POLAR	BI-POLAR
NUMBER OF PHASES	————	2	2
STEP ANGLE	deg./step	1.8	1.8
VOLTAGE	V	6.4	4.6
CURRENT	A/PHASE	0.47	0.65
RESISTANCE	Ω/PHASE	13.6	7.0
INDUCTANCE	mH/PHASE	9.8	9.8
HOLDING TORQUE	mN·m	127	157
	oz · in	18	22
DETENT TORQUE	mN·m	11.8	11.8
	oz · in	1.7	1.7
ROTOR INERTIA	g · cm²	27	27
	oz · in²	0.15	0.15
WEIGHT	g	240	240
	lb	0.53	0.53
INSULATION RESISTANCE	————	500VDC 100MΩmin.	
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.	
OPERATING TEMP.RANGE	℃	0 to 50	
ALLOWABLE TEMP.RISE	K	70	

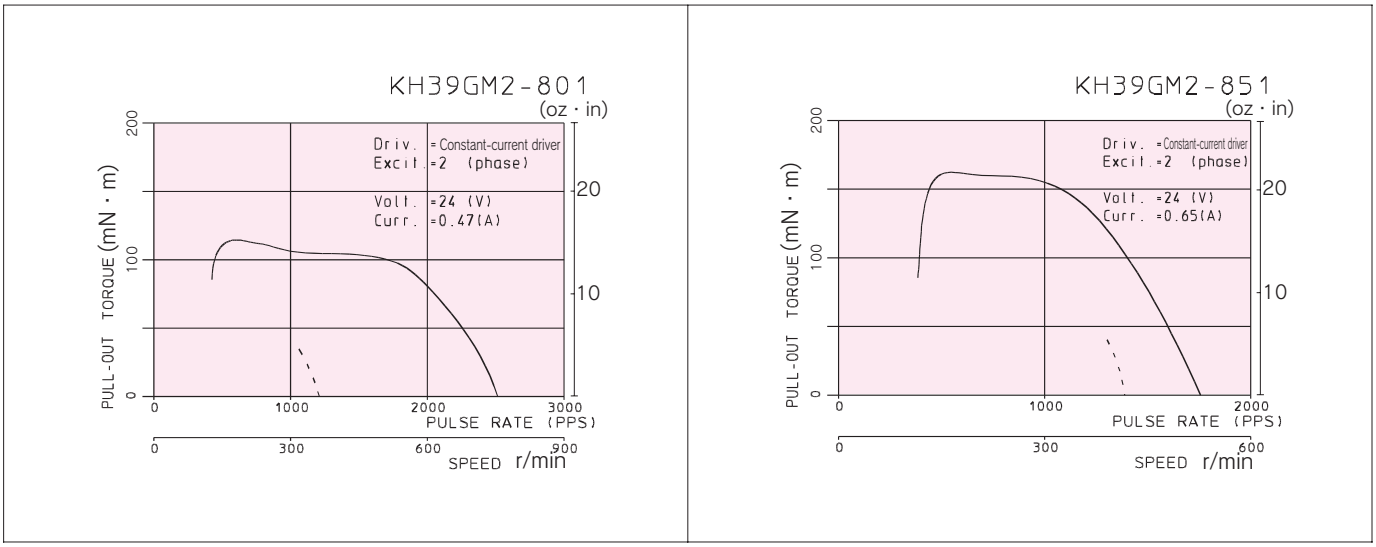
■ DIMENSIONS unit = mm (inch)



Features

1. High torque
   Output is 1.3 times as high as conventional products.
2. Low noise -7dB(A)quieter than conventional products.

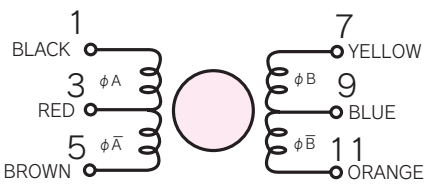
■ TORQUE CHARACTERISTICS vs. PULSE RATE



PULL-OUT
PULL-IN

■ CONNECTION DIAGRAMS

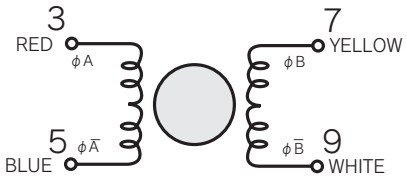
UNI-POLAR (801)



EXCITATION SEQUENCE

STEP	1	2	3	4
BLACK(1)	−			−
YELLOW(7)	−	−		
BROWN(5)		−	−	
ORANGE(11)			−	−
RED(3)	+	+	+	+
BLUE(9)	+	+	+	+

BI-POLAR (851)

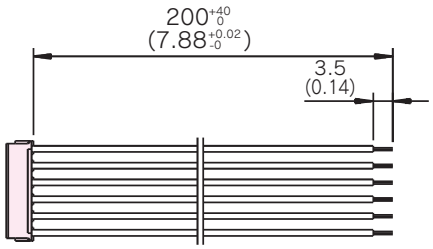


EXCITATION SEQUENCE

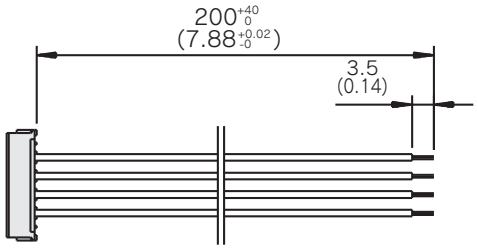
STEP	1	2	3	4
RED(3)	−	+	+	−
YELLOW(7)	−	−	+	+
BLUE(5)	+	−	−	+
WHITE(9)	+	+	−	−

■ CONNECTION CABLE TO MOTOR unit = mm (inch)

UNI-POLAR



BI-POLAR



KH42-B900 Series (1.8 degree/step)

Model Code

KH 42 34 – B901 0 1

① ② ③ ④ ⑤ ⑥

①	Series	KH (Hybrid Type 2 Phase Stepping Motor)				
②	Motor Size	□42				
③	Motor Length	34 mm	38 mm	42 mm	48 mm	54 mm
④	Winding Method	Unipolar: B901, B902		Bipolar: B951		
⑤	Shaft Specification	0: Single Shaft		1: Double Shaft		
⑥	Shaft Length	1: 20 mm	2: 24 mm		3: 16 mm	

Rare earth magnet models		Non-rare earth magnet models
KH4234-B90101	⇒	~~KH4234-B90601~~
KH4238-B90101	⇒	~~KH4238-B90601~~
KH4238-B90201	⇒	~~KH4238-B90701~~
KH4242-B90101	⇒	~~KH4242-B90601~~
KH4242-B90201	⇒	~~KH4242-B90701~~
KH4248-B90101	⇒	~~KH4248-B90601~~
KH4254-B90101	⇒	~~KH4254-B90601~~
KH4234-B95101	⇒	~~KH4234-B95601~~
KH4238-B95101	⇒	~~KH4238-B95601~~
KH4242-B95101	⇒	~~KH4242-B95601~~
KH4248-B95101	⇒	~~KH4248-B95601~~
KH4254-B95101	⇒	~~KH4254-B95601~~

Standard Specifications

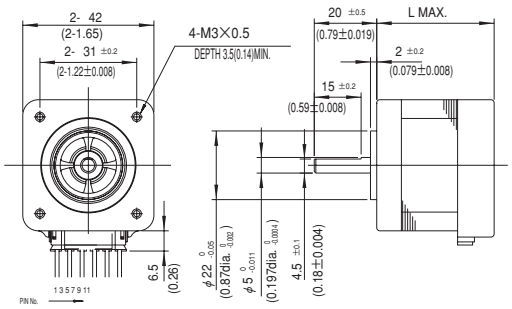
Unipolar

Model	Voltage	Current	Resistance	Inductance	Holding Torque		Detent Torque		Rotor Inertia	
	V/Φ	A/Φ	Ω/Φ	mH/Φ	mN·m	OZ·in	mN·m	OZ·in	g·cm²	OZ·in²
KH4234-B90101	2.97	1.1	2.7	2.1	190	27	12	1.7	38	0.2
KH4238-B90101	3.08	1.4	2.2	1.9	260	37	16	2.3	48	0.3
KH4238-B90201	3.60	1.2	3.0	2.8	260	37	16	2.3	48	0.3
KH4242-B90101	3.25	1.3	2.5	2.6	300	42	18	2.5	59	0.3
KH4242-B90201	3.74	1.1	3.4	4.0	300	42	18	2.5	59	0.3
KH4248-B90101	3.60	1.2	3.0	2.6	350	50	24	3.4	78	0.4
KH4254-B90101	4.20	1.2	3.5	4.1	460	65	30	4.2	98	0.5

Bipolar

Model	Voltage	Current	Resistance	Inductance	Holding Torque		Detent Torque		Rotor Inertia	
	V/Φ	A/Φ	Ω/Φ	mH/Φ	mN·m	OZ·in	mN·m	OZ·in	g·cm²	OZ·in²
KH4234-B95101	3.41	1.1	3.1	4.4	250	35	12	1.7	38	0.2
KH4238-B95101	3.24	1.2	2.7	4.9	340	48	16	2.3	48	0.3
KH4242-B95101	3.41	1.1	3.1	6.9	380	54	18	2.5	59	0.3
KH4248-B95101	3.00	1.5	2.0	3.6	480	68	24	3.4	78	0.4
KH4254-B95101	3.22	1.4	2.3	5.0	570	81	30	4.2	98	0.5

Dimensions Unit: mm (inch)



Model	L (mm)	L (inch)
KH4234	34	1.34
KH4238	38	1.50
KH4242	42	1.65
KH4248	48	1.89
KH4254	54	2.13

Note

Conformable Housing: PHR-11 (JST)

Conformable Contact: SPH-002T-P0.5S (JST)

The standard B900 motor is supplied without a leadwire assembly.

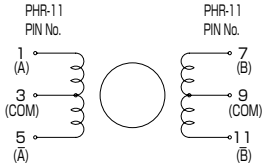
This must be ordered as a separate part.

Specification

Temperature Rise	70K max. (By resistance method)
Insulation Resistance	100 M Ω min. At 500 V DC (at normal temp. & humidity, between lead and case)
Dielectric Strength	500 V AC 50 Hz for 1 minute (at normal temp. & humidity, between lead and case)
Ambient Temp. Range	-10˚C ~ +50˚C
Storage Temp. Range	-20˚C ~ +70˚C
Humidity Range in Operation and Storage	5 %~ 95 % RH (noncondensing)

Connection Diagrams

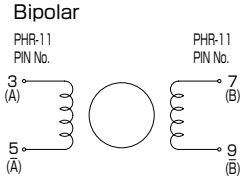
Unipolar



CW viewed from rotor shaft when using the following sequence diagram.

PHR-11 Pin No.	PHASE	1	2	3	4
1	A	–			
7	B		–		
5	Ā			–	
11	B̄				–
3	A com	+	+	+	+
9	B com	+	+	+	+

Bipolar



CW viewed from rotor shaft when using the following sequence diagram.

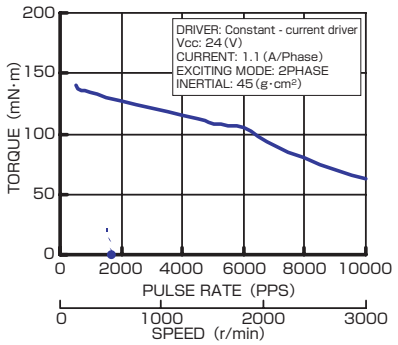
PHR-11 Pin No.	PHASE	1	2	3	4
3	A	–	+	+	–
7	B	–	–	+	+
5	Ā	+	–	–	+
9	B̄	+	+	–	–

*** For red-lines product,Discontinued.**

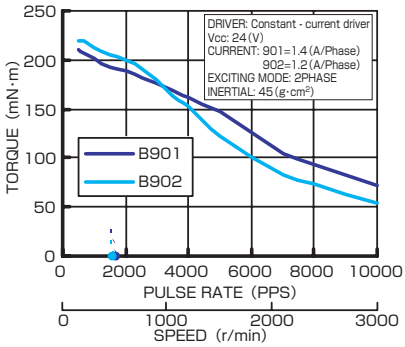
Speed-Torque Characteristics

Unipolar

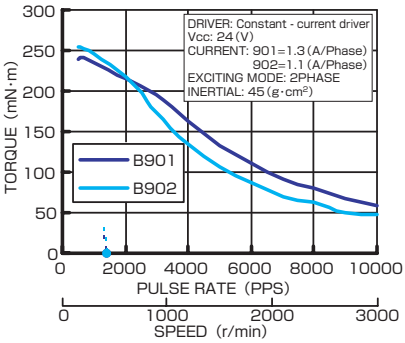
KH4234-B901□□



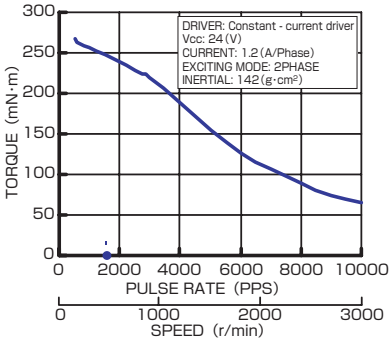
KH4238-B901□□/B902□□



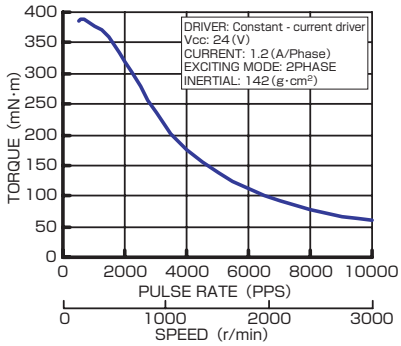
KH4242-B901□□/B902□□



KH4248-B901□□

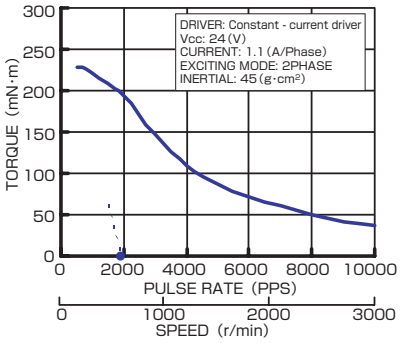


KH4254-B901□□

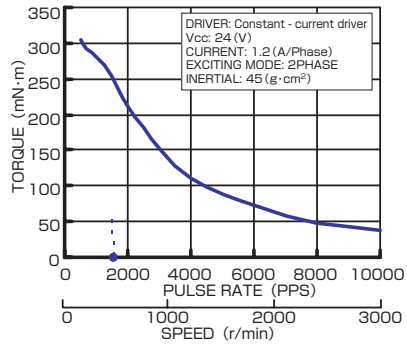


Bipolar

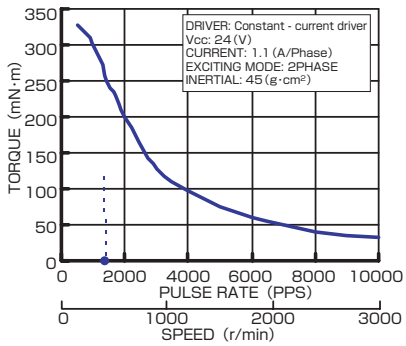
KH4234-B951□□



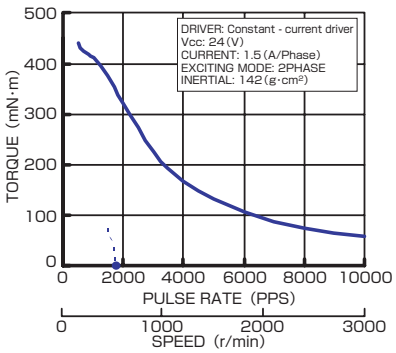
KH4238-B951□□



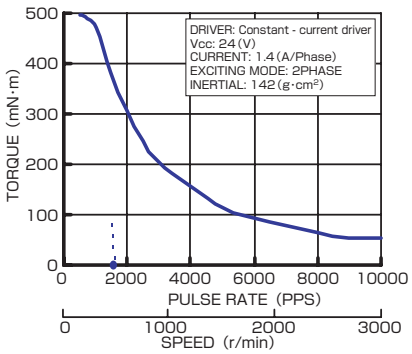
KH4242-B951□□



KH4248-B951□□



KH4254-B951□□



Semi Standard Models

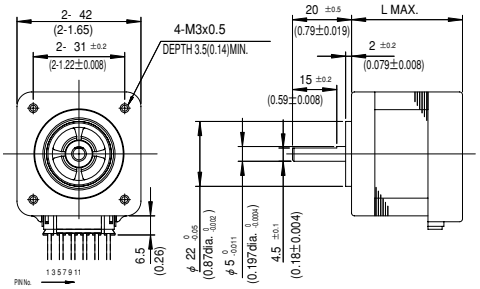
Unipolar

Model	Motor Length L1		Shaft Length L2		Shaft Specification
	mm	inch	mm	inch	
KH4234-B90102	34	1.34	24	0.95	Single shaft
KH4234-B90103			16	0.63	Single shaft
KH4234-B90111			20	0.79	Double shaft
KH4234-B90112			24	0.95	Double shaft
KH4234-B90113			16	0.63	Double shaft
KH4238-B90102	38	1.50	24	0.95	Single shaft
KH4238-B90103			16	0.63	Single shaft
KH4238-B90111			20	0.79	Double shaft
KH4238-B90112			24	0.95	Double shaft
KH4238-B90113			16	0.63	Double shaft
KH4238-B90202			24	0.95	Single shaft
KH4238-B90203			16	0.63	Single shaft
KH4238-B90211			20	0.79	Double shaft
KH4238-B90212			24	0.95	Double shaft
KH4238-B90213			16	0.63	Double shaft
KH4242-B90102	42	1.65	24	0.95	Single shaft
KH4242-B90103			16	0.63	Single shaft
KH4242-B90111			20	0.79	Double shaft
KH4242-B90112			24	0.95	Double shaft
KH4242-B90113			16	0.63	Double shaft
KH4242-B90202			24	0.95	Single shaft
KH4242-B90203			16	0.63	Single shaft
KH4242-B90211			20	0.79	Double shaft
KH4242-B90212			24	0.95	Double shaft
KH4242-B90213			16	0.63	Double shaft
KH4248-B90102	48	1.89	24	0.95	Single shaft
KH4248-B90103			16	0.63	Single shaft
KH4248-B90111			20	0.79	Double shaft
KH4248-B90112			24	0.95	Double shaft
KH4248-B90113			16	0.63	Double shaft
KH4254-B90102	54	2.13	24	0.95	Single shaft
KH4254-B90103			16	0.63	Single shaft
KH4254-B90111			20	0.79	Double shaft
KH4254-B90112			24	0.95	Double shaft
KH4254-B90113			16	0.63	Double shaft

Bipolar

Model	Motor Length L1		Shaft Length L2		Shaft Specification
	mm	inch	mm	inch	
KH4234-B95102	34	1.34	24	0.95	Single shaft
KH4234-B95103			16	0.63	Single shaft
KH4234-B95111			20	0.79	Double shaft
KH4234-B95112			24	0.95	Double shaft
KH4234-B95113			16	0.63	Double shaft
KH4238-B95102	38	1.50	24	0.95	Single shaft
KH4238-B95103			16	0.63	Single shaft
KH4238-B95111			20	0.79	Double shaft
KH4238-B95112			24	0.95	Double shaft
KH4238-B95113			16	0.63	Double shaft
KH4242-B95102	42	1.65	24	0.95	Single shaft
KH4242-B95103			16	0.63	Single shaft
KH4242-B95111			20	0.79	Double shaft
KH4242-B95112			24	0.95	Double shaft
KH4242-B95113			16	0.63	Double shaft
KH4248-B95102	48	1.89	24	0.95	Single shaft
KH4248-B95103			16	0.63	Single shaft
KH4248-B95111			20	0.79	Double shaft
KH4248-B95112			24	0.95	Double shaft
KH4248-B95113			16	0.63	Double shaft
KH4254-B95102	54	2.13	24	0.95	Single shaft
KH4254-B95103			16	0.63	Single shaft
KH4254-B95111			20	0.79	Double shaft
KH4254-B95112			24	0.95	Double shaft
KH4254-B95113			16	0.63	Double shaft

[Semi Standard Model Dimensions Unit: mm (inch)]



Note

Conformable Housing: PHR-11 (JST)

Conformable Contact: SPH-002T-P0.5S (JST)

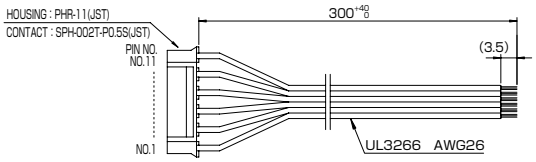
The standard B900 motor is supplied without a leadwire assembly.

This must be ordered as a separate part.

Option

Leadwire Assembly

KH42LUS300 (Unipolar)



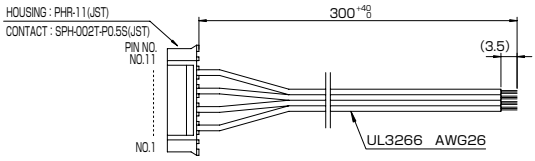
PHR-11 (Pin No.)	1	3	5	7	9	11
Excitation (PHASE)	A	A com	$\overline{A}$	B	B com	$\overline{B}$
Cable Color	Black	Red	Brown	Yellow	Blue	Orange

Note

The standard B900 motor is supplied without a leadwire assembly.

This must be ordered as a separate part.

KH42LBS300 (Bipolar)

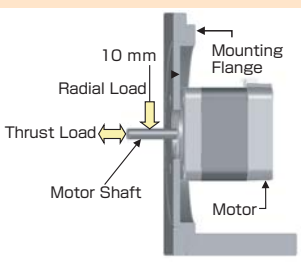


PHR-11 (Pin No.)	3	5	7	9
Excitation (PHASE)	A	$\overline{A}$	B	$\overline{B}$
Cable Color	Red	Blue	Yellow	White

Max. Allowable Load/Runout For Motor Shaft

Load For Motor Shaft

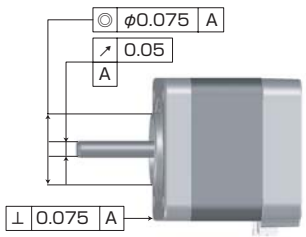
Type	Thrust Load	Radial Load
		Load
KA50	14.7 N (1.5 kgf) (3.3 lb)	19.6 N (2.0 kgf) (4.4 lb)



Shaft Runout

Shaft Runout	0.05 T.I.R. (mm) ※
Concentricity Between Shaft and Mounting Circle	0.075 T.I.R. (mm) ※
Perpendicularity Between Shaft and Mounting Face	0.075 T.I.R. (mm) ※

※ T.I.R. (Total Indicator Reading)



2-Phase Hybrid Stepping Motor
KH56 Series

B900Type
KH56
New

1.8°/step
□56mm

Bi-Polar

SINGLE SHAFT

MODEL
KH5640-B95101
KH5640-B95201
KH5652-B95101
KH5652-B95201
KH5674-B95101
KH5674-B95201

OPTION

KH56LBS300_6PIN

FEATURES

● High Torque (Up at Peak time 15 to 20% higher than our previous products)

SPECIFICATIONS

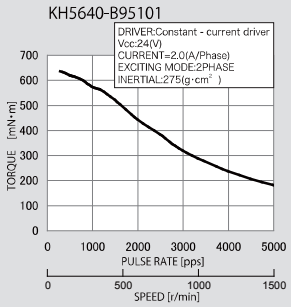
STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE (Measured value) mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	2.4	2.0	1.2	3.1	(780)	170	KH5640-B95101
1.8	3.5	1.4	2.5	6.0	(780)	170	KH5640-B95201
1.8	3.36	2.0	1.68	4.5	(1310)	310	KH5652-B95101
1.8	4.9	1.4	3.5	8.8	(1310)	310	KH5652-B95201
1.8	5.2	2.0	2.6	7.2	(2270)	530	KH5674-B95101
1.8	7.42	1.4	5.3	13.9	(2270)	530	KH5674-B95201

[GENERAL SPECIFICATIONS]

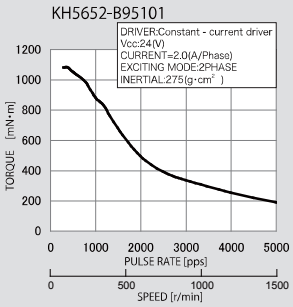
INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	70K max(By resistance method)
POSITION ACCURACY	±10%

SPEED-TORQUE CHARACTERISTICS

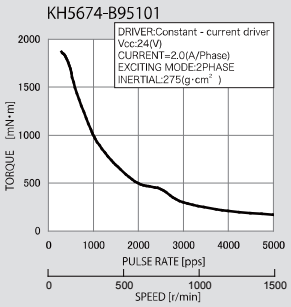
KH5640-B95101



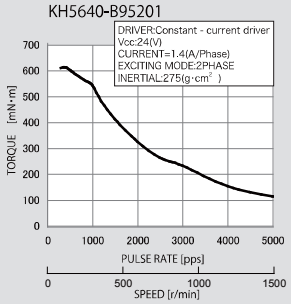
KH5652-B95101



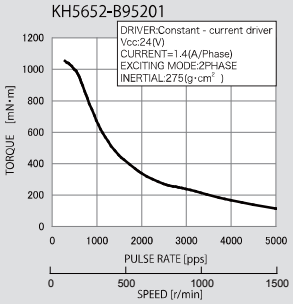
KH5674-B95101



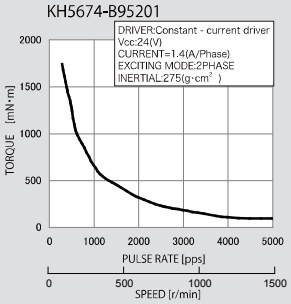
KH5640-B95201



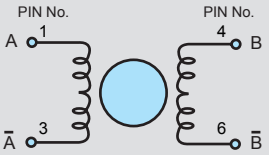
KH5652-B95201



KH5674-B95201



CONNECTION DIAGRAMS



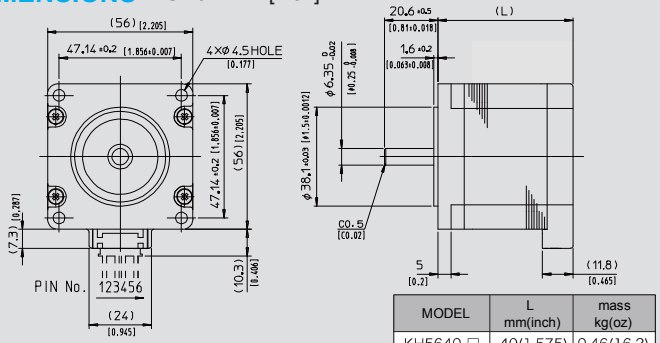
XHP-6 (PIN NO.)	1	3	4	6
PHASE	A	Ā	B	B̄
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE

CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	+	+	−	−
B	−	+	+	−
Ā	−	−	+	+
B̄	+	−	−	+

DIMENSIONS Unit = mm [inch]



MODEL	L mm(inch)	mass kg(oz)
KH5640-□	40(1.575)	0.46(16.2)
KH5652-□	52(2.047)	0.65(22.9)
KH5674-□	74(2.913)	1.0(35.3)

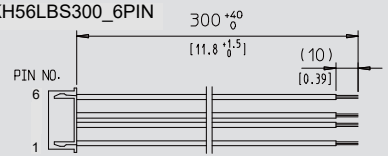
The KH56 B900 type motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

CONNECTOR SPECIFICATIONS

Maker	JST
Applicable Housing	XHP-6
Applicable Terminal	SXH-001T-P0.6
Lead Wire	AWG#22 , UL3266

OPTION (Leadwire Assembly)

MODEL:KH56LBS300_6PIN



2-Phase Hybrid Stepping Motor
KH56 Series

B900Type
KH56
New
1.8°/step
□56mm

Uni-Polar

SINGLE SHAFT

MODEL
KH5640-B90101
KH5640-B90201
KH5652-B90101
KH5652-B90201
KH5674-B90101
KH5674-B90201

OPTION

KH56LUS300_6PIN

■FEATURES

● High Torque (Up at Peak time 15 to 20% higher than our previous products)

■SPECIFICATIONS

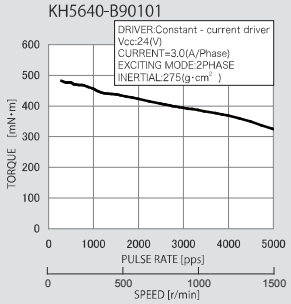
STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE (Measured value) mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	1.75	3.0	0.58	0.92	(680)	170	KH5640-B90101
1.8	2.7	2.0	1.35	2.0	(680)	170	KH5640-B90201
1.8	2.28	3.0	0.76	1.4	(1140)	310	KH5652-B90101
1.8	3.6	2.0	1.8	3.0	(1140)	310	KH5652-B90201
1.8	3.48	3.0	1.16	2.2	(1970)	530	KH5674-B90101
1.8	5.4	2.0	2.7	4.9	(1970)	530	KH5674-B90201

[GENERAL SPECIFICATIONS]

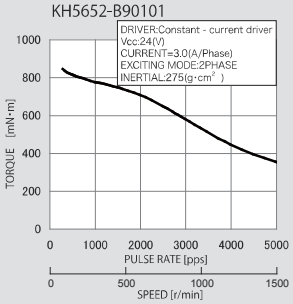
INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	70K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS

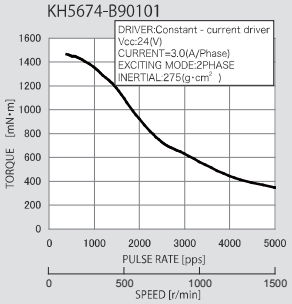
KH5640-B90101



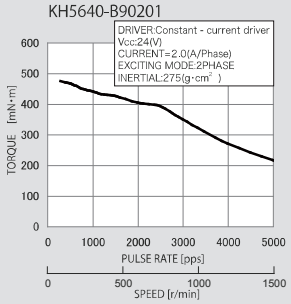
KH5652-B90101



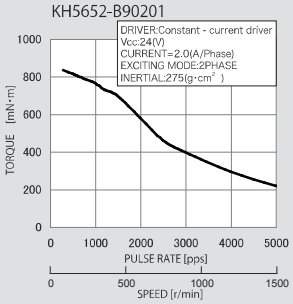
KH5674-B90101



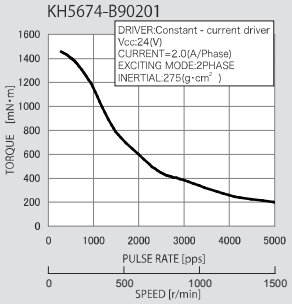
KH5640-B90201



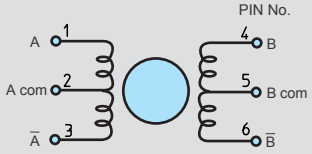
KH5652-B90201



KH5674-B90201



■CONNECTION DIAGRAMS



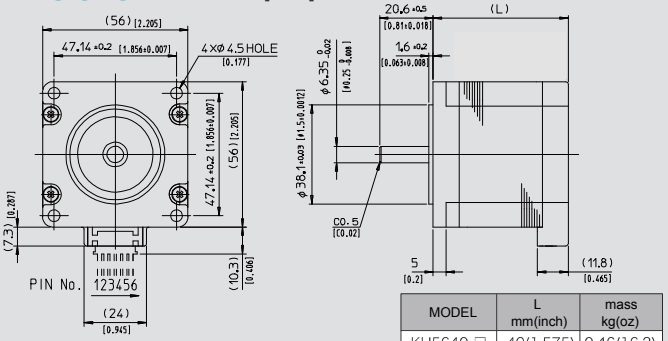
XHP-6(PIN NO.)	1	2	3	4	5	6
PHASE	A	A com	Ā	B	B com	B̄
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−			−
B	−	−		
Ā		−	−	
B̄			−	−
A com	+	+	+	+
B com	+	+	+	+

■DIMENSIONS Unit = mm [inch]



MODEL	L mm(inch)	mass kg(oz)
KH5640-□	40(1.575)	0.46(16.2)
KH5652-□	52(2.047)	0.65(22.9)
KH5674-□	74(2.913)	1.0(35.3)

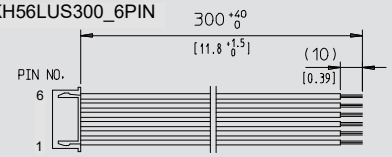
The KH56 B900 type motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■CONNECTOR SPECIFICATIONS

Maker	JST
Applicable Housing	XHP-6
Applicable Terminal	SXH-001T-P0.6
Lead Wire	AWG#22 , UL3266

■OPTION (Leadwire Assembly)

MODEL:KH56LUS300_6PIN



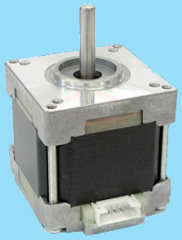
2-Phase Hybrid Stepping Motor
KF42 Series

KF42

New

1.8°/step

□42mm NEMA17



Bi-Polar

■Applications

OA
FA
Money-handling &
Banking equipment
Medical Devices

SINGLE SHAFT

MODEL
KF4234-EN2B801
KF4239-EN2B801
KF4239-EN2B802
KF4242-EN2B801
KF4242-EN2B802

OPTION

KV42LBS300

■FEATURES

- A motor size down, achieving the torque of one size up.
  ※ Expanding the rotor diameter to its maximum limit within a new "flattened" structure allows the □42motor profile to be maintained.
- Large Rotor
- High Torque

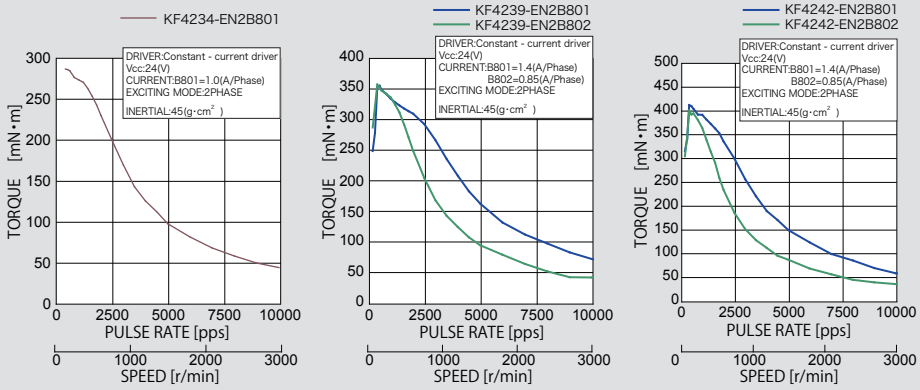
■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	4.1	1.0	4.1	5.3	330	70	KF4234-EN2B801
1.8	3.08	1.4	2.2	2.7	400	100	KF4239-EN2B801
1.8	4.85	0.85	5.7	6.9	400	100	KF4239-EN2B802
1.8	3.36	1.4	2.4	4.0	460	145	KF4242-EN2B801
1.8	5.36	0.85	6.3	10.0	460	145	KF4242-EN2B802

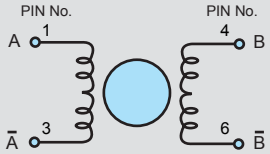
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS



■CONNECTION DIAGRAMS



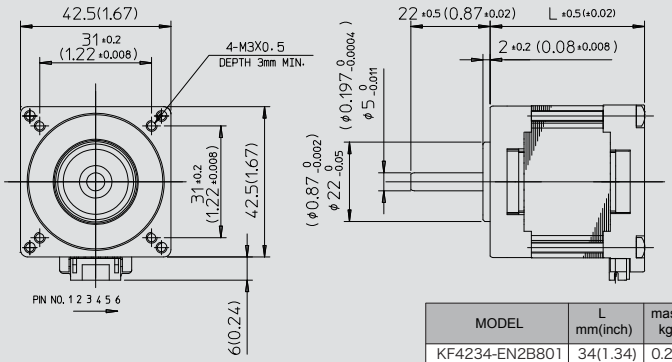
PHR-6 (PIN NO.)	1	3	4	6
PHASE	A	Ā	B	B̄
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE

CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−	+	+	−
B	−	−	+	+
Ā	+	−	−	+
B̄	+	+	−	−

■DIMENSIONS Unit = mm(inch)

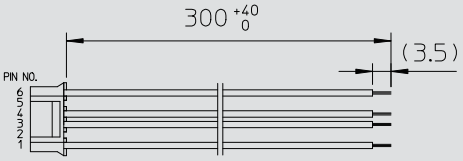


MODEL	L mm(inch)	mass kg
KF4234-EN2B801	34(1.34)	0.23
KF4239-EN2B801	39(1.54)	0.29
KF4239-EN2B802	39(1.54)	0.29
KF4242-EN2B801	42(1.66)	0.33
KF4242-EN2B802	42(1.66)	0.33

The KF42 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■OPTION (Leadwire Assembly)

MODEL:KV42LBS300



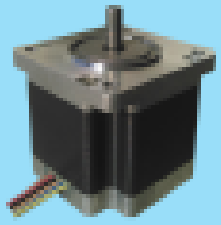
■CONNECTOR SPECIFICATIONS

Maker	JST
Applicable Housing	PHR-6
Applicable Terminal	SPH-002T-P0.5S
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KH60 Series

KH60

1.8°/step
□60mm



Uni-Polar

SINGLE SHAFT

MODEL
KH6054-B9010□
KH6054-B9020□
KH6065-B9010□
KH6065-B9020□

■FEATURES

● High Torque (Up at Peak time 10 to 20% higher than our previous products)

■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE N・m	ROTOR INERTIA g・cm²	MODEL
1.8	3.00	3.0	1	1.4	(1.45)	520	KH6054-B9010□
1.8	4.60	2.0	2.3	3.4	(1.45)	520	KH6054-B9020□
1.8	3.30	3.0	1.1	1.5	(1.75)	680	KH6065-B9010□
1.8	5.60	2.0	2.8	3.7	(1.75)	680	KH6065-B9020□

Note : KH60 is ready to two mounting dimensions.

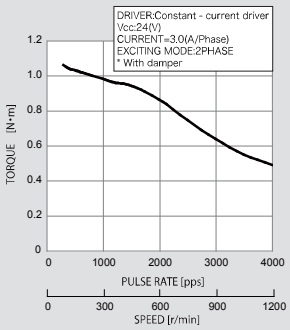
□ End of model name	Mounting hole pitch	Mounting inlay diameter
1	47.14	ϕ38.1
2	50	ϕ36

[GENERAL SPECIFICATIONS]

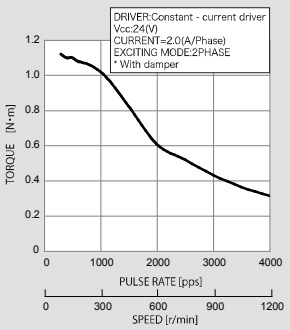
INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH (noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH (noncondensing)
TEMPERATURE. RISE	70K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS

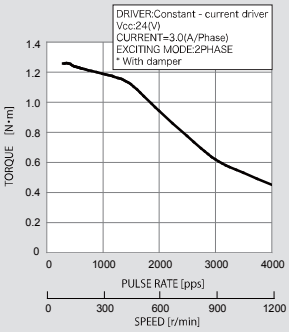
KH6054-B9010□



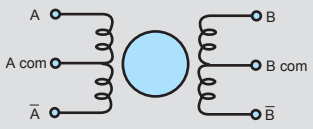
KH6054-B9020□



KH6065-B9010□



■CONNECTION DIAGRAMS



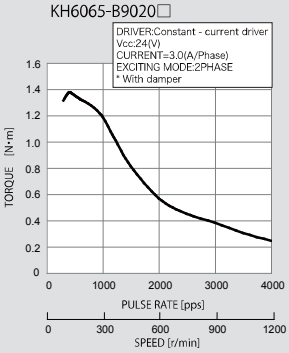
PHASE	A	A com	Ā	B	B com	B̄
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

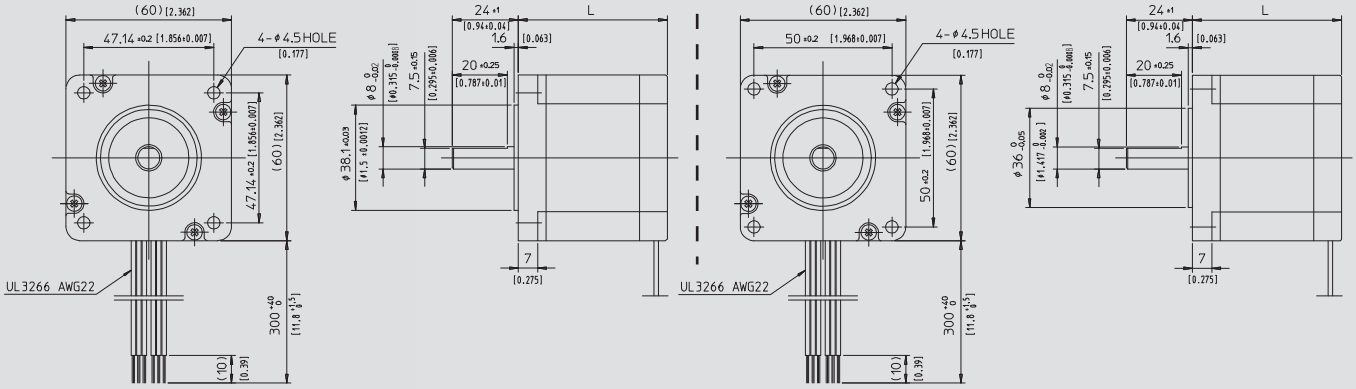
PHASE	1	2	3	4
A	−			−
B	−	−		
Ā		−	−	
B̄			−	−
A com	+	+	+	+
B com	+	+	+	+

KH6065-B9020□



■DIMENSIONS

Unit = mm [inch]



□ End of model name 1

MODEL	L mm(inch)	mass kg(oz)
KH6054	54(2.126)	0.83(29.3)
KH6065	65(2.559)	1.02(36.0)

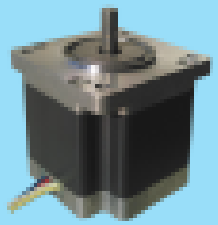
□ End of model name 2

2-Phase Hybrid Stepping Motor
KH60 Series

KH60

1.8°/step

□56mm



Bi-Polar

SINGLE SHAFT

MODEL
KH6054-B9510□
KH6065-B9510□

■FEATURES

● High Torque (Up at Peak time 15 to 20% higher than our previous products)

■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE N・m	ROTOR INERTIA g・cm²	MODEL
1.8	3.08	2.8	1.1	3.3	(1.95)	520	KH6054-B9510□
1.8	3.92	2.8	1.4	3.8	(2.4)	680	KH6065-B9510□

Note : KH60 is ready to two mounting dimensions.

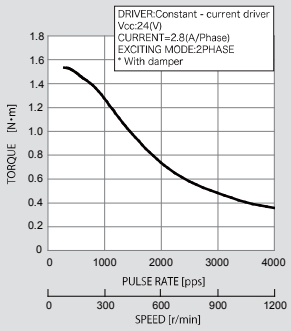
□ End of model name	Mounting hole pitch	Mounting inlay diameter
1	47.14	φ38.1
2	50	φ36

[GENERAL SPECIFICATIONS]

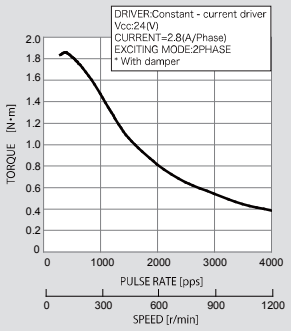
INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	70K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS

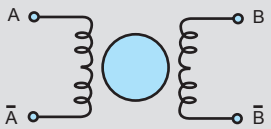
KH6054-B9510□



KH6065-B9510□



■CONNECTION DIAGRAMS



PHASE	A	Ā	B	B̄
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE

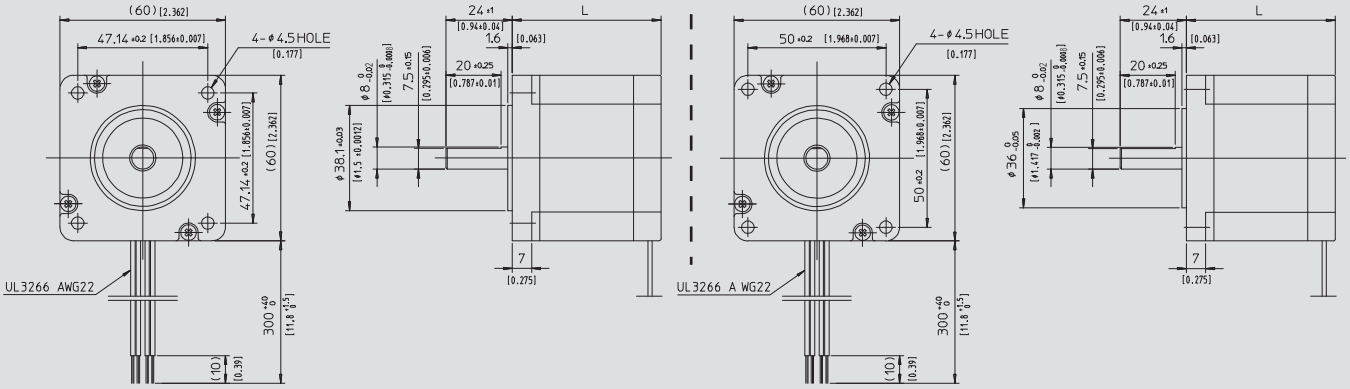
CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	+	+	−	−
B	−	+	+	−
Ā	−	−	+	+
B̄	+	−	−	+

■DIMENSIONS

Unit = mm [inch]



□ End of model name 1

MODEL	L mm(inch)	mass kg(oz)
KH6054	54(2.126)	0.83(29.3)
KH6065	65(2.559)	1.02(36.0)

□ End of model name 2

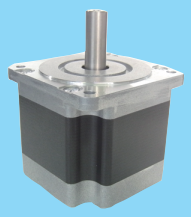
2-Phase Hybrid Stepping Motor
KH86 Series

KH86

New

1.8°/step

□86mm



Uni-Polar

■Application

- Large-size printer
- Industrial sewing machine
- Food packaging machine
- Weaving machine

SINGLE SHAFT

MODEL
KH86QM2-901
KH86QM2-902
KH86RM2-901
KH86RM2-902
KH86TM2-901
KH86TM2-902
KH86WM2-901
KH86WM2-902

DOUBLE SHAFT

MODEL
KH86QM2-911
KH86QM2-912
KH86RM2-911
KH86RM2-912
KH86TM2-911
KH86TM2-912
KH86WM2-911
KH86WM2-912

■FEATURES

- Non-rare earth magnet models
- High Torque

■SPECIFICATIONS

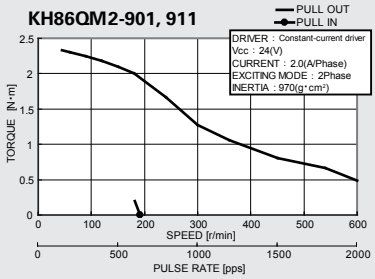
STEP ANGLE deg./step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE N·m	HOLDING TORQUE kgf·cm	ROTOR INERTIA g·cm²	MODEL SINGLE SHAFT	MODEL DOUBLE SHAFT
1.8	3.60	2.0	1.8	5.6	2.5	25.5	1800	**KH86QM2-901**	**KH86QM2-911**
1.8	2.12	4.5	0.47	1.2	2.5	25.5	1800	**KH86QM2-902**	**KH86QM2-912**
1.8	4.00	2.0	2.1	7.5	3.0	30.6	2300	**KH86RM2-901**	**KH86RM2-911**
1.8	2.20	4.5	0.5	1.5	3.0	30.6	2300	**KH86RM2-902**	**KH86RM2-912**
1.8	5.60	2.0	2.8	11.5	4.7	47.9	3700	**KH86TM2-901**	**KH86TM2-911**
1.8	2.97	4.5	0.66	2.3	4.7	47.9	3700	**KH86TM2-902**	**KH86TM2-912**
1.8	7.60	2.0	3.8	17.0	6.7	68.3	5500	**KH86WM2-901**	**KH86WM2-911**
1.8	3.80	4.0	0.95	3.6	6.7	68.3	5500	**KH86WM2-902**	**KH86WM2-912**

[GENERAL SPECIFICATIONS]

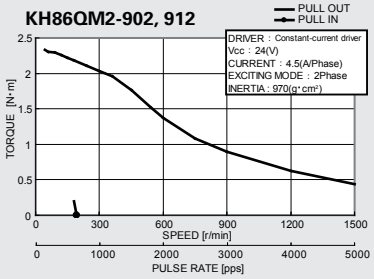
INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.
AMBIENT TEMP. AND HUMIDITY	-10℃~+50℃、5%~95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃~+70℃、5%~95%RH(noncondensing)
TEMPERATURE RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS

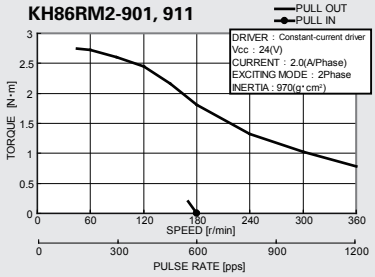
KH86QM2-901, 911



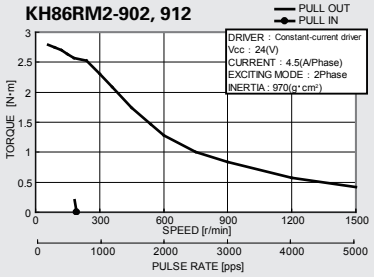
KH86QM2-902, 912



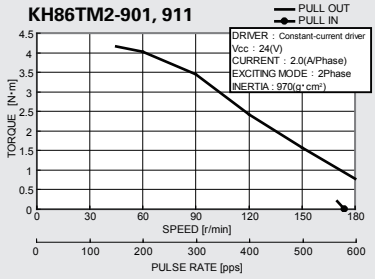
KH86RM2-901, 911



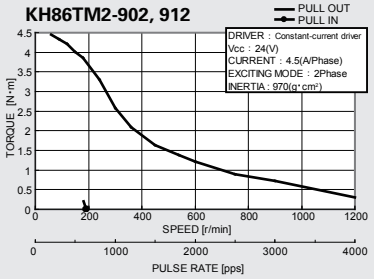
KH86RM2-902, 912



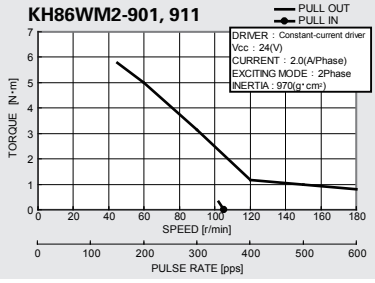
KH86TM2-901, 911



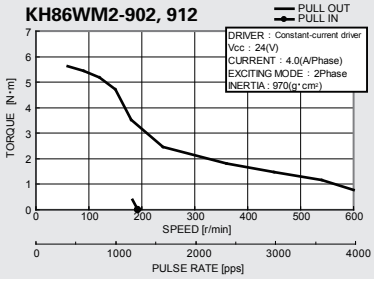
KH86TM2-902, 912



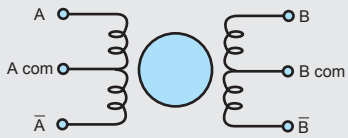
KH86WM2-901, 911



KH86WM2-902, 912



■CONNECTION DIAGRAMS



PHASE	A	A com	$\overline{A}$	B	B com	$\overline{B}$
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

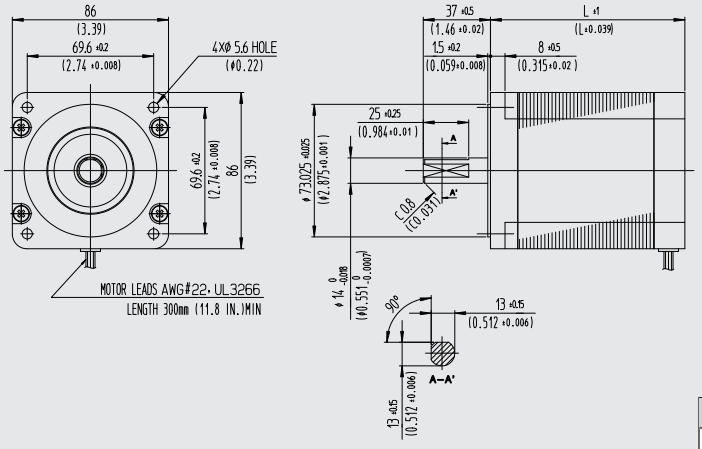
CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

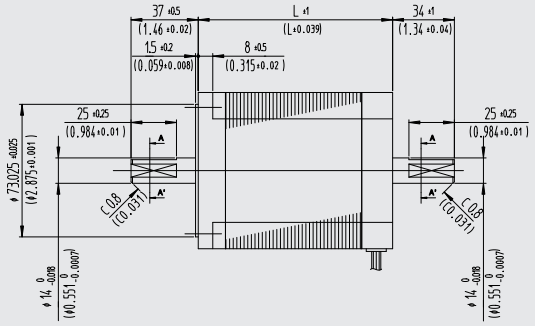
PHASE	1	2	3	4
A	−			−
B	−	−		
$\overline{A}$		−	−	
$\overline{B}$			−	−
A com	+	+	+	+
B com	+	+	+	+

■DIMENSIONS Unit = mm(inch)

[SINGLE SHAFT]



[DOUBLE SHAFT]

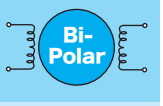


MODEL	L(mm)	L(inch)	mass(kg)	weight(lb)
KH86QM2	66	2.60	2.0	4.4
KH86RM2	74	2.91	2.5	5.5
KH86TM2	96	3.78	3.0	6.6
KH86WM2	127	5.00	4.5	9.9

2-Phase Hybrid Stepping Motor
KV28 Series

KV28

1.8°/step
□28mm



■Applications

FA , Medical Devices
Security equipment

SINGLE SHAFT

MODEL
KV2832-N2B951
KV2841-N2B951
KV2851-N2B951

OPTION

KV28LBS300

■FEATURES

● Space saving

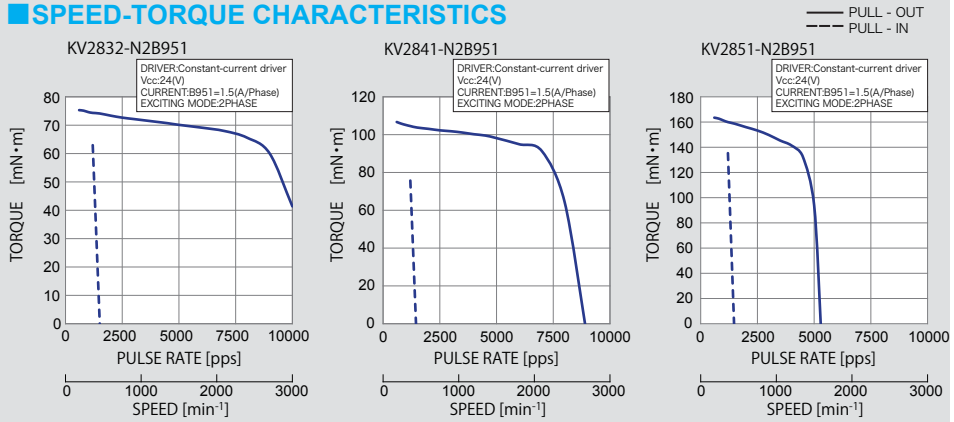
■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	1.95	1.5	1.3	0.9	85	9.2	KV2832-N2B951
1.8	2.55	1.5	1.7	1.0	120	15	KV2841-N2B951
1.8	3.15	1.5	2.1	1.7	165	22	KV2851-N2B951

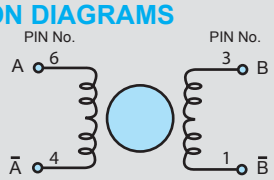
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS



■CONNECTION DIAGRAMS



51065-06000 (PIN NO.)	6	4	3	1
PHASE	A	Ā	B	B̄
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE

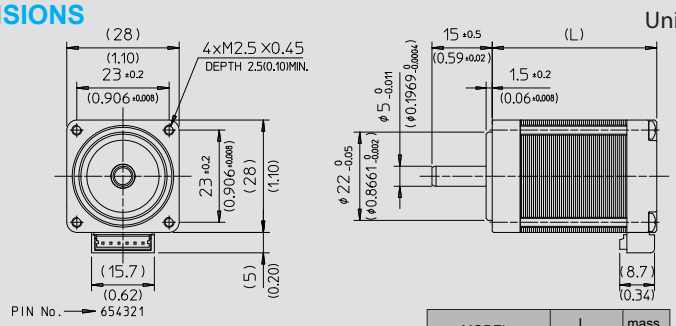
CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
6 (A)	−	+	+	−
3 (B)	−	−	+	+
4 (Ā)	+	−	−	+
1 (B̄)	+	+	−	−

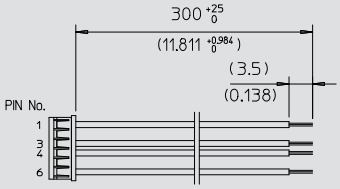
■DIMENSIONS

Unit = mm(inch)



MODEL	L mm(inch)	mass g
KV2832-N2B951	32(1.26)	110
KV2841-N2B951	41(1.61)	140
KV2851-N2B951	51(2.01)	190

■OPTION (Leadwire Assembly)



The KV28 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■CONNECTOR SPECIFICATIONS

Maker	MOLEX
Applicable Housing	51065-0600
Applicable Terminal	50372-8000
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KV28 Series

KV28

1.8°/step
□28mm

Uni-Polar

■Applications

FA , Medical Devices
Security equipment

SINGLE SHAFT

MODEL
KV2832-N2U901
KV2841-N2U901
KV2851-N2U901

OPTION

KV28LUS300

■FEATURES

● Space saving

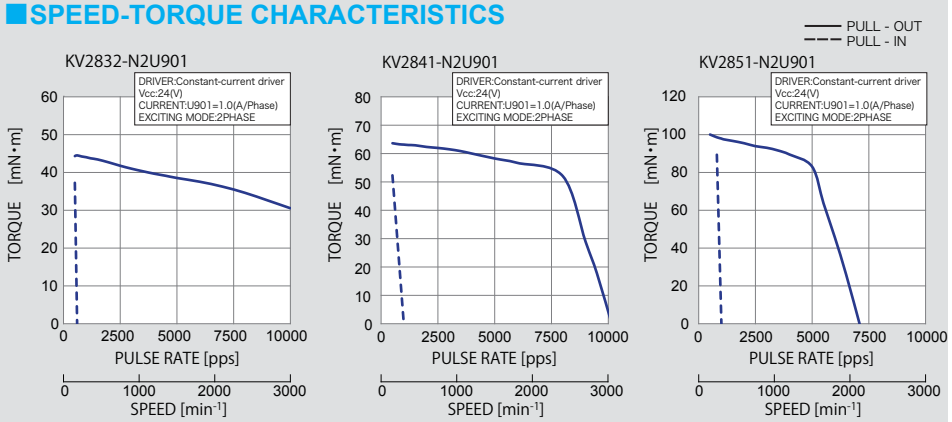
■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	3.00	1.0	3.0	1.0	65	9.2	KV2832-N2U901
1.8	3.60	1.0	3.8	1.2	85	15	KV2841-N2U901
1.8	3.80	1.0	4.3	1.7	120	22	KV2851-N2U901

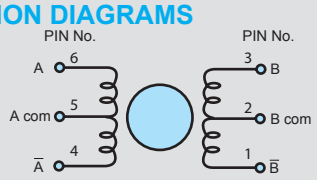
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS



■CONNECTION DIAGRAMS



51065-0600(PIN NO.)	6	5	4	3	2	1
PHASE	A	A com	Ā	B	B com	B̄
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

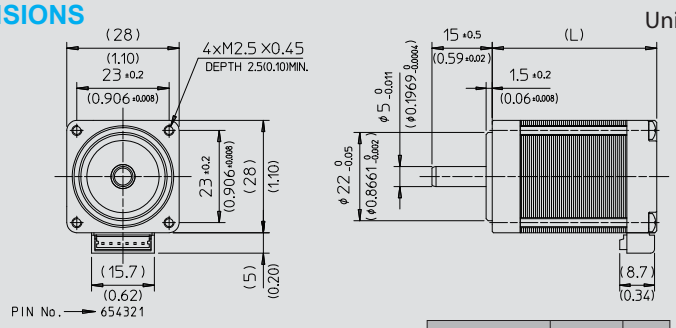
CW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−			−
B	−	−		
Ā		−	−	
B̄			−	−
A com	+	+	+	+
B com	+	+	+	+

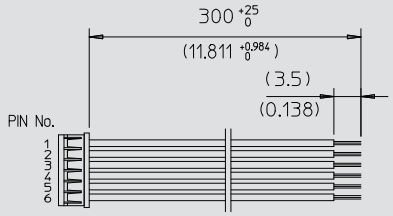
■DIMENSIONS

Unit = mm(inch)



MODEL	L mm(inch)	mass g
KV2832-N2U901	32(1.26)	110
KV2841-N2U901	41(1.61)	140
KV2851-N2U901	51(2.01)	190

■OPTION (Leadwire Assembly)



The KV28 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■CONNECTOR SPECIFICATIONS

Maker	MOLEX
Applicable Housing	51065-0600
Applicable Terminal	50372-8000
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KV42 Series

KV42

4.09°/step

□42mm NEMA17

Bi-Polar

■Applications

OA , FA , Medical Devices
Money-handling &
Banking equipment

SINGLE SHAFT

MODEL	
KV4234-N4B801	
KV4239-T4B801	＊Low Vibration Type
KV4239-N4B801	
KV4242-N4B801	
KV4248-N4B801	

OPTION

KV42LBS300

■FEATURES

- High Speed・High Torque,
- KH42-B900 Successor Model

■SPECIFICATIONS

STEP ANGLE ° /step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
4.09	2.52	1.4	1.8	2.7	200	42	KV4234-N4B801
4.09	2.94	1.4	2.1	4.2	215	59	KV4239-T4B801
4.09	2.94	1.4	2.1	3.8	260	59	KV4239-N4B801
4.09	3.22	1.4	2.3	4.5	290	69	KV4242-N4B801
4.09	3.78	1.4	2.7	5.0	390	79	KV4248-N4B801

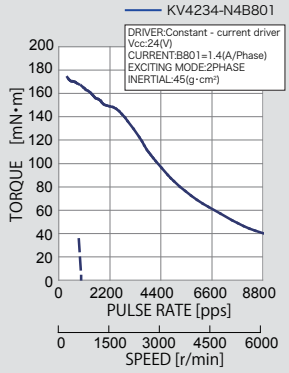
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

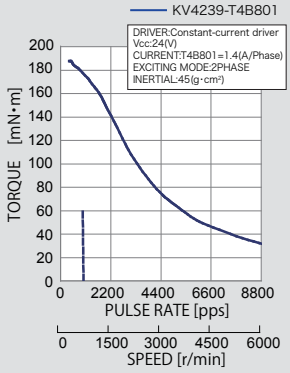
■SPEED-TORQUE CHARACTERISTICS

PULL - OUT
PULL - IN

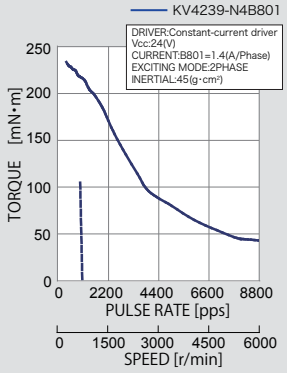
KV4234-N4B801



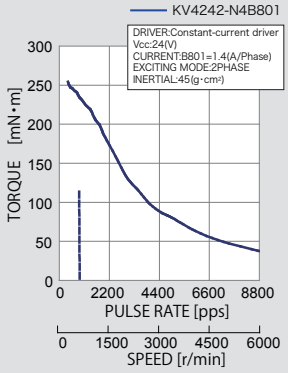
KV4239-T4B801



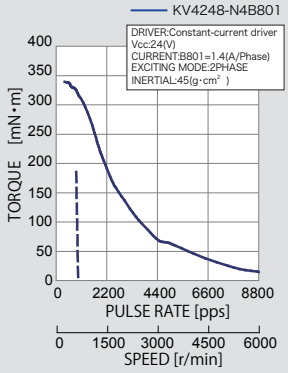
KV4239-N4B801



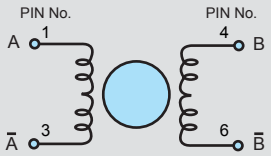
KV4242-N4B801



KV4248-N4B801



■CONNECTION DIAGRAMS



Warning
Unlike other series, this series will rotate in reverse.

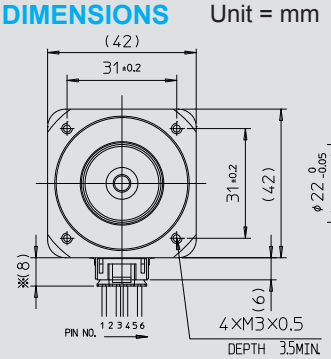
CCW viewed from rotor shaft when using the following sequence diagram.

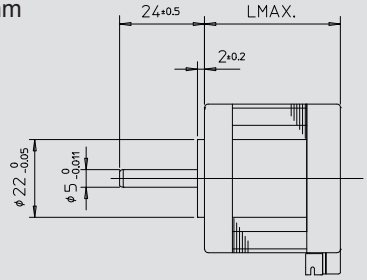
EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−	+	+	−
B	−	−	+	+
Ā	+	−	−	+
B̄	+	+	−	−

PHR-6 (PIN NO.)	1	3	4	6
PHASE	A	Ā	B	B̄
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE

■DIMENSIONS Unit = mm



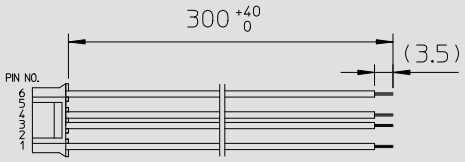


MODEL	L mm(inch)	mass kg
KV4234-N4B801	34(1.34)	0.21
KV4239-T4B801	39(1.54)	0.26
KV4239-N4B801	39(1.54)	0.26
KV4242-N4B801	42(1.65)	0.32
KV4248-N4B801	48(1.89)	0.37

The KV42 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■OPTION (Leadwire Assembly)

MODEL:KV42LBS300



■CONNECTOR SPECIFICATIONS

Maker	JST
Applicable Housing	PHR-6
Applicable Terminal	SPH-002T-P0.5S
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KV42 Series

KV42

4.09°/step

□42mm NEMA17

Uni-Polar

■Applications

OA , FA , Medical Devices
Money-handling &
Banking equipment

SINGLE SHAFT

MODEL
KV4234-N4U801
KV4239-T4U801
KV4239-N4U801
KV4242-N4U801
KV4248-N4U801

*Low Vibration Type

OPTION

KV42LUS300

■FEATURES

- High Speed・High Torque,
- KH42-B900 Successor Model

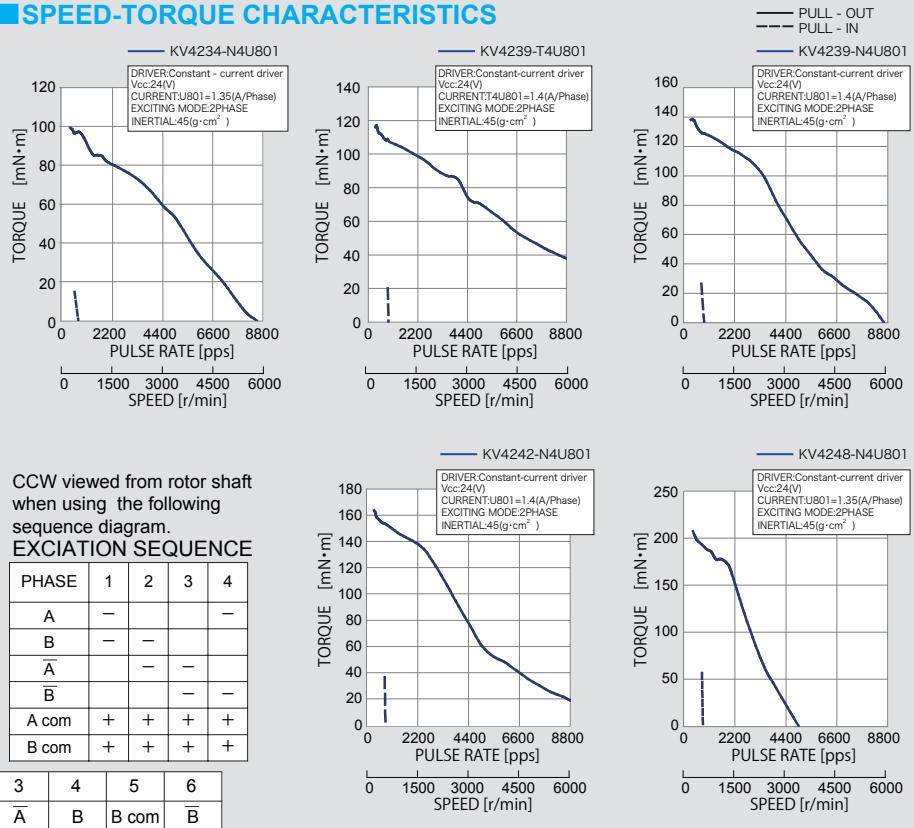
■SPECIFICATIONS

STEP ANGLE °/step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
4.09	2.57	1.35	1.9	1.4	150	42	KV4234-N4U801
4.09	3.08	1.4	2.2	2.1	160	59	KV4239-T4U801
4.09	3.08	1.4	2.2	1.9	200	59	KV4239-N4U801
4.09	3.50	1.4	2.5	2.4	230	69	KV4242-N4U801
4.09	4.05	1.35	3.0	2.7	280	79	KV4248-N4U801

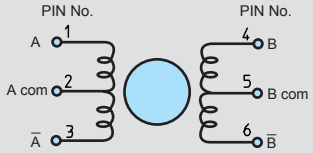
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS



■CONNECTION DIAGRAMS



Warning
Unlike other series, this series will rotate in reverse.

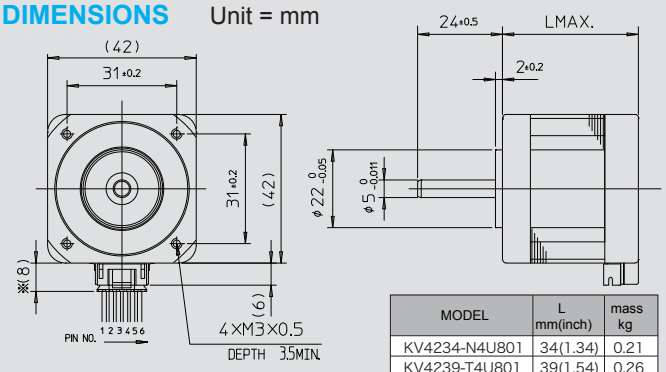
CCW viewed from rotor shaft when using the following sequence diagram.

EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−			−
B	−	−		
Ā		−	−	
B̄			−	−
A com	+	+	+	+
B com	+	+	+	+

PHR-6(PIN NO.)	1	2	3	4	5	6
PHASE	A	A com	Ā	B	B com	B̄
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

■DIMENSIONS Unit = mm

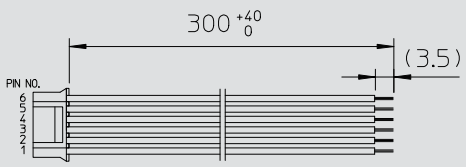


MODEL	L mm(inch)	mass kg
KV4234-N4U801	34(1.34)	0.21
KV4239-T4U801	39(1.54)	0.26
KV4239-N4U801	39(1.54)	0.26
KV4242-N4U801	42(1.65)	0.32
KV4248-N4U801	48(1.89)	0.37

The KV42 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■OPTION (Leadwire Assembly)

MODEL:KV42LUS300



■CONNECTOR SPECIFICATIONS

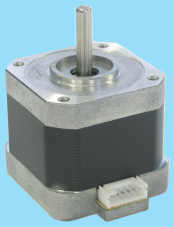
Maker	JST
Applicable Housing	PHR-6
Applicable Terminal	SPH-002T-P0.5S
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KV42 Series

KV42

1.8°/step

□42mm NEMA17



Uni-Polar

■Applications

OA , FA
Money-handling &
Banking equipment
Medical Devices

SINGLE SHAFT

MODEL	
KV4234-N2U801	
KV4239-T2U801	＊Low Vibration Type
KV4239-N2U801	
KV4242-N2U801	
KV4248-N2U801	

OPTION

KV42LUS300

■FEATURES

- High Speed・High Torque, Low Noise
- KH42-B900 Successor Model

■SPECIFICATIONS

STEP ANGLE °/step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	2.97	1.10	2.7	2.1	210	42	KV4234-N2U801
1.8	3.36	1.20	2.8	3.2	220	59	KV4239-T2U801
1.8	3.36	1.2	2.8	2.9	280	59	KV4239-N2U801
1.8	3.54	1.2	3.0	3.2	320	69	KV4242-N2U801
1.8	4.08	1.2	3.4	3.7	410	79	KV4248-N2U801

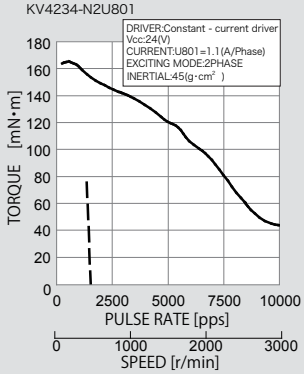
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

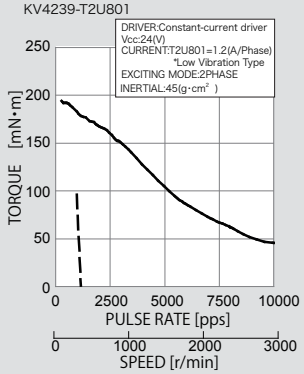
■SPEED-TORQUE CHARACTERISTICS

PULL - OUT
PULL - IN

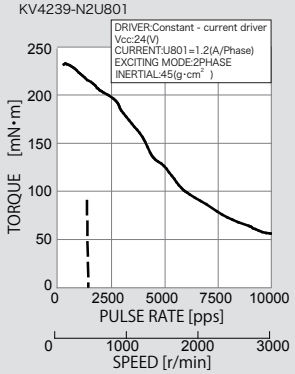
KV4234-N2U801



KV4239-T2U801



KV4239-N2U801

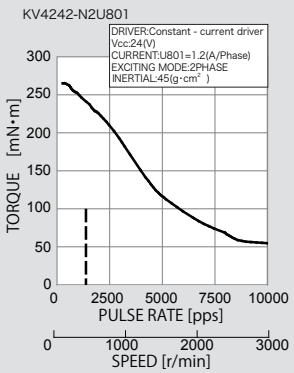


CW viewed from rotor shaft when using the following sequence diagram.

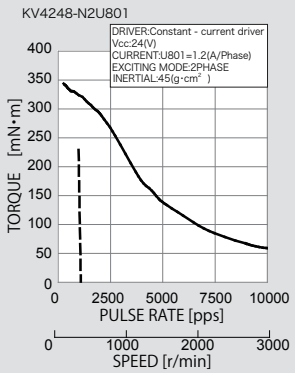
EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−			−
B	−	−		
$\overline{A}$		−	−	
$\overline{B}$			−	−
A com	+	+	+	+
B com	+	+	+	+

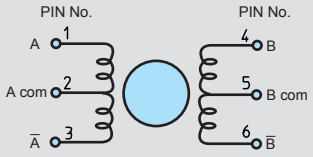
KV4242-N2U801



KV4248-N2U801

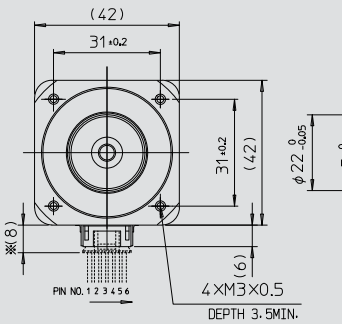


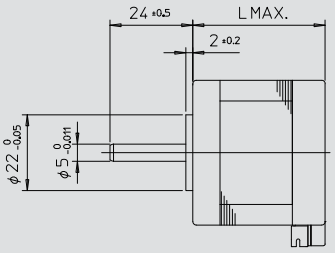
■CONNECTION DIAGRAMS



PHR-6(PIN NO.)	1	2	3	4	5	6
PHASE	A	A com	$\overline{A}$	B	B com	$\overline{B}$
COLOR OF LEAD	BLACK	RED	BROWN	YELLOW	BLUE	ORANGE

■DIMENSIONS Unit = mm



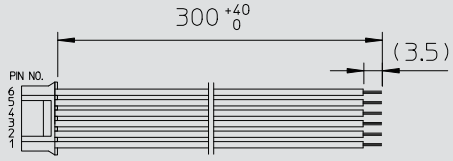


MODEL	L mm(inch)	mass kg
KV4234-N2U801	34(1.34)	0.21
KV4239-T2U801	39(1.54)	0.26
KV4239-N2U801	39(1.54)	0.26
KV4242-N2U801	42(1.66)	0.32
KV4248-N2U801	48(1.89)	0.37

The KV42 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

■OPTION (Leadwire Assembly)

MODEL:KV42LUS300



■CONNECTOR SPECIFICATIONS

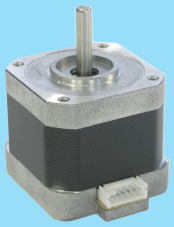
Maker	JST
Applicable Housing	PHR-6
Applicable Terminal	SPH-002T-P0.5S
Lead Wire	UL3266 AWG26

2-Phase Hybrid Stepping Motor
KV42 Series

KV42

1.8°/step

□42mm NEMA17



Bi-Polar

■Applications

OA , FA , Medical Devices
Money-handling &
Banking equipment

SINGLE SHAFT

MODEL	
KV4234-N2B801	
KV4234-N2B802	
KV4239-T2B801	＊Low Vibration Type
KV4239-T2B802	＊Low Vibration Type
KV4239-N2B801	
KV4239-N2B802	
KV4242-N2B801	
KV4248-N2B801	

OPTION

KV42LBS300

■FEATURES

- High Speed・High Torque, Low Noise
- KH42-B900 Successor Model

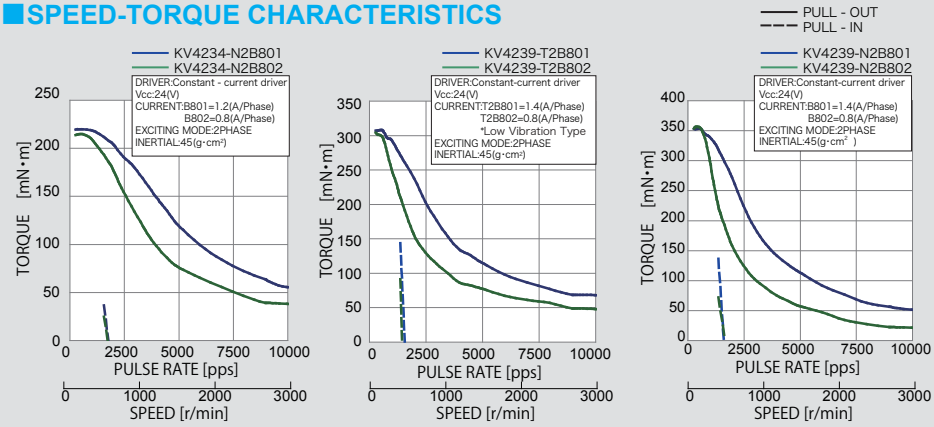
■SPECIFICATIONS

STEP ANGLE °/step	VOLTAGE V	CURRENT A/PHASE	WINDING RESISTANCE Ω/PHASE	INDUCTANCE mH/PHASE	HOLDING TORQUE mN・m	ROTOR INERTIA g・cm²	MODEL
1.8	2.76	1.2	2.3	3.6	260	42	KV4234-N2B801
1.8	4.00	0.8	5.0	7.5	260	42	KV4234-N2B802
1.8	2.94	1.4	2.1	4.5	300	59	KV4239-T2B801
1.8	4.88	0.8	6.1	14.0	300	59	KV4239-T2B802
1.8	2.94	1.4	2.1	4.1	370	59	KV4239-N2B801
1.8	4.88	0.8	6.1	14.0	370	59	KV4239-N2B802
1.8	3.72	1.2	3.1	5.0	420	69	KV4242-N2B801
1.8	3.90	1.3	3.0	6.1	530	79	KV4248-N2B801

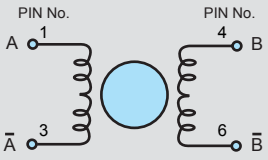
[GENERAL SPECIFICATIONS]

INSULATION RESISTANCE	500V DC 100MΩ min.(at normal temp.& humidity,between lead and case)
DIELECTRIC STRENGTH	500V AC 50Hz 1min.(at normal temp.& humidity,between lead and case)
AMBIENT TEMP. AND HUMIDITY	-10℃～+50℃、5%～95%RH(noncondensing)
STORAGE TEMP.AND HUMIDITY	-20℃～+70℃、5%～95%RH(noncondensing)
TEMPERATURE. RISE	80K max(By resistance method)
POSITION ACCURACY	±10%

■SPEED-TORQUE CHARACTERISTICS



■CONNECTION DIAGRAMS

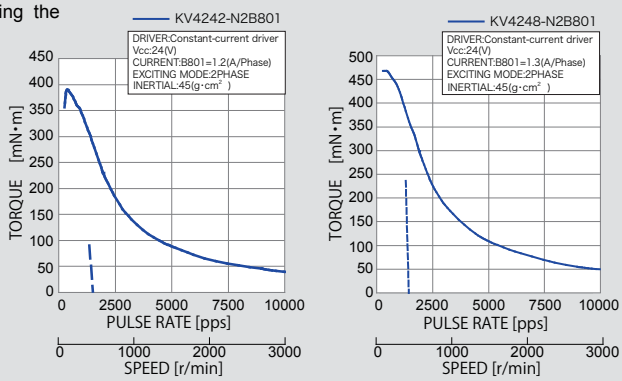


CW viewed from rotor shaft when using the following sequence diagram.

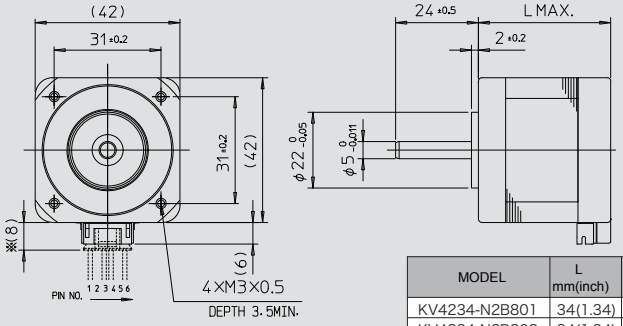
EXCIATION SEQUENCE

PHASE	1	2	3	4
A	−	+	+	−
B	−	−	+	+
$\overline{A}$	+	−	−	+
$\overline{B}$	+	+	−	−

PHR-6 (PIN NO.)	1	3	4	6
PHASE	A	$\overline{A}$	B	$\overline{B}$
COLOR OF LEAD	RED	BLUE	YELLOW	WHITE



■DIMENSIONS Unit = mm

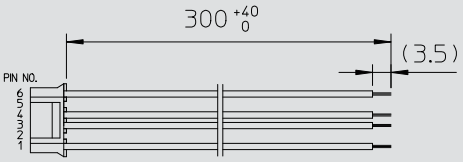


The KV42 motor is supplied without a leadwire assembly.
This must be ordered as a separate part.

MODEL	L mm(inch)	mass kg
KV4234-N2B801	34(1.34)	0.21
KV4234-N2B802	34(1.34)	0.21
KV4239-T2B801	39(1.54)	0.26
KV4239-T2B802	39(1.54)	0.26
KV4239-N2B801	39(1.54)	0.26
KV4239-N2B802	39(1.54)	0.26
KV4242-N2B801	42(1.66)	0.32
KV4248-N2B801	48(1.89)	0.37

■OPTION (Leadwire Assembly)

MODEL:KV42LBS300



■CONNECTOR SPECIFICATIONS

Maker	JST
Applicable Housing	PHR-6
Applicable Terminal	SPH-002T-P0.5S
Lead Wire	UL3266 AWG26

3-Phase Hybrid Stepping Motor 1.2°

KT35 series *TRISYN*

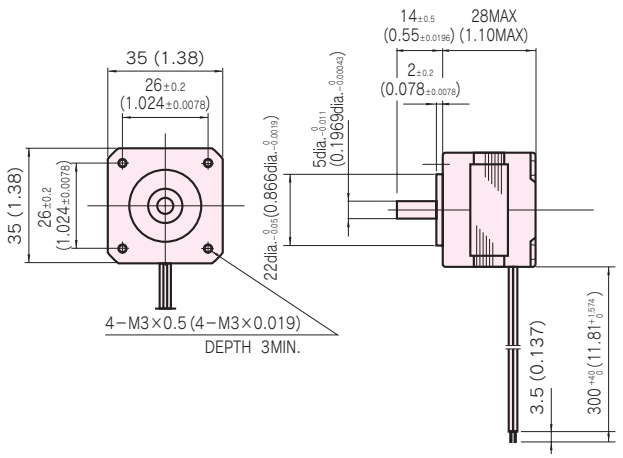
HIGH TORQUE, SILENT ROTATION

■ STANDARD SPECIFICATIONS

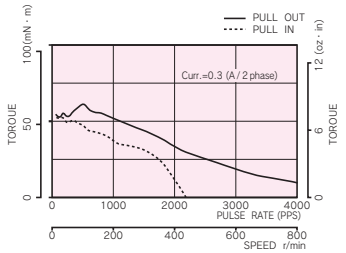
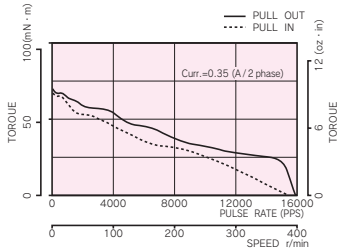
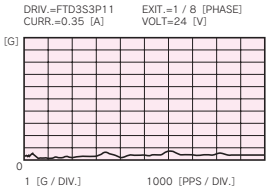
M O D E L	UNIT	KT35FM1
		-552
DRIVE METHOD	————	BI-POLAR
NUMBER OF PHASES	————	3
STEP ANGLE	deg./step	1.2
VOLTAGE	V	10.8
CURRENT	A/2-PHASE	0.3
WINDING RESISTANCE	Ω/2-PHASE	36
INDUCTANCE	mH/2-PHASE	26
HOLDING TORQUE	mN · m	58.9
	oz · in	8.3
DETENT TORQUE	mN · m	9.8
	oz · in	1.4
ROTOR INERTIA	g · cm²	8
	oz · in²	0.044
WEIGHTS	g	110
	lb	0.24
INSULATION RESISTANCE	————	500VDC 100MΩmin.
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.
OPERATING TEMP. RANGE	℃	0 to 50
ALLOWABLE TEMP. RISE	K	70

KT35FM1

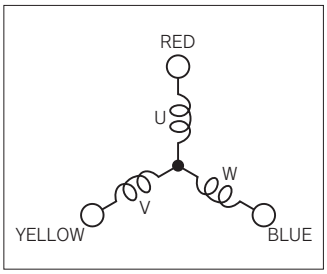
■ DIMENSIONS unit = mm (inch)



KT35FM1

TORQUE CHARACTERISTICS vs. PULSE RATE (FULL STEP) 24V 2 PHASE	
TORQUE CHARACTERISTICS vs. PULSE RATE (MICRO-STEP) 24V 1/8 DIVISIONS	
VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)	

■ Connection Diagram



[EXCITATION SEQUENCE]

STEP / PHASE	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-

3-Phase Hybrid Stepping Motor 1.2°

KT42 series *TRISYN*

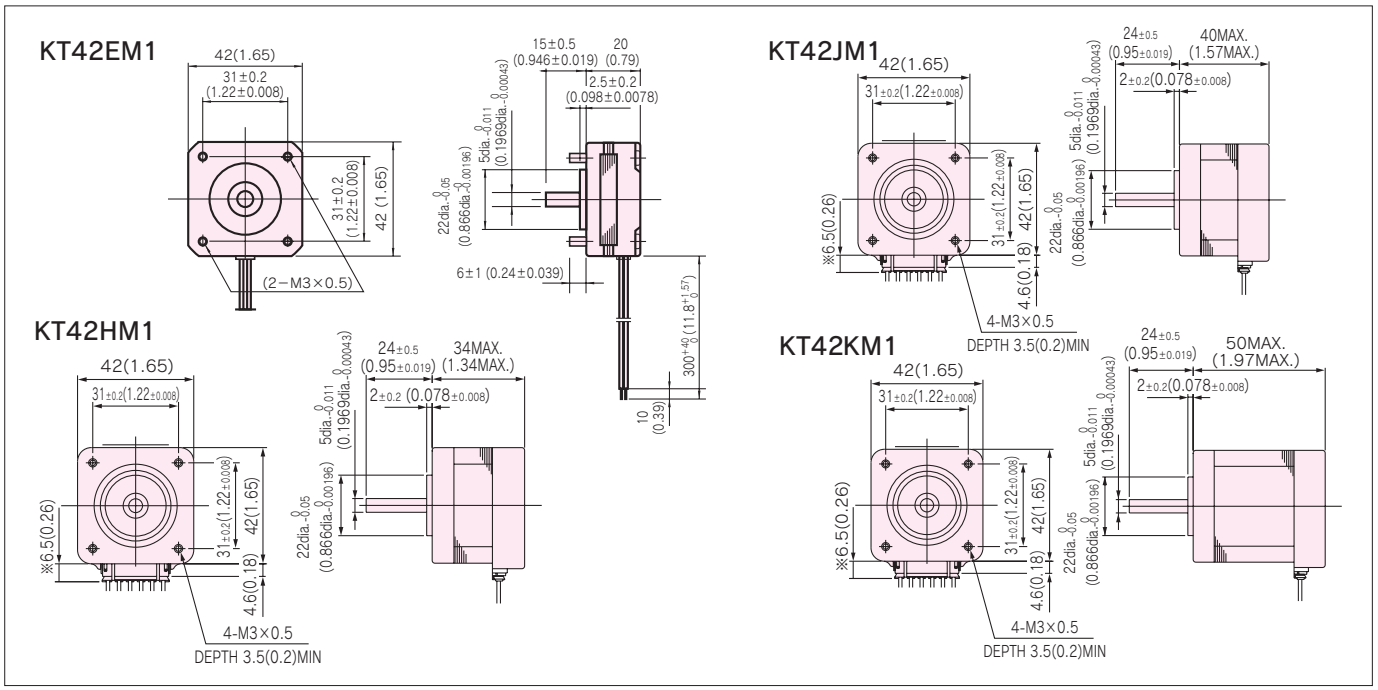
HIGH TORQUE, SILENT ROTATION

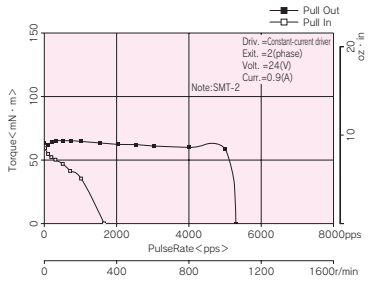
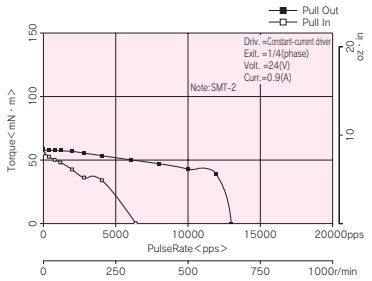
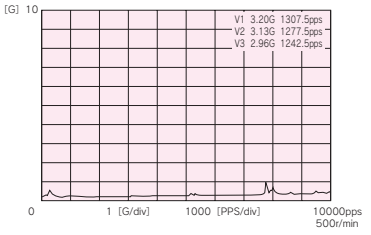
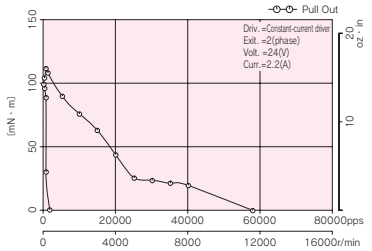
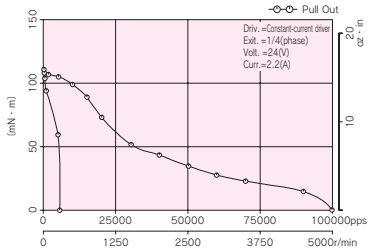
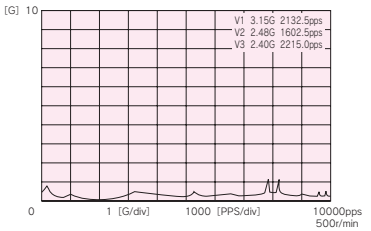
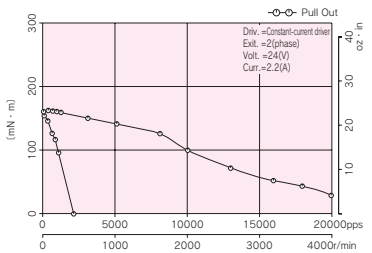
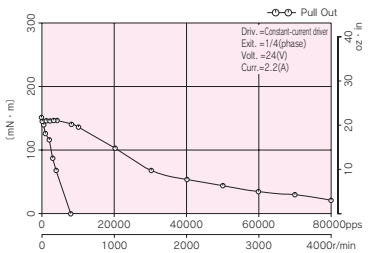
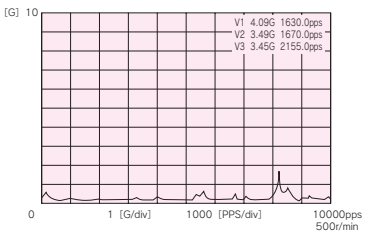
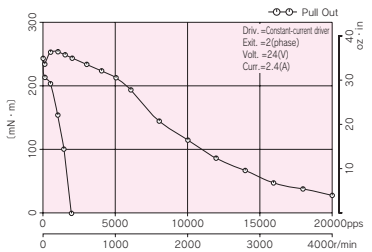
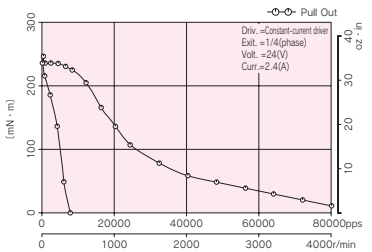
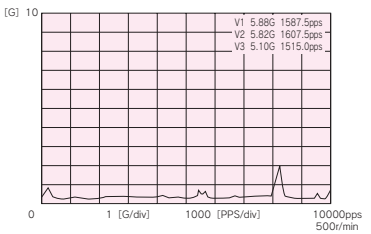
■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KT42EM1 -551	KT42HM1 -551	KT42JM1 -551	KT42KM1 -551
DRIVE METHOD	————	BI-POLAR			
NUMBER OF PHASES	————	3			
STEP ANGLE	deg./step	1.2			
VOLTAGE	V	5.3	2.64	2.88	3.6
CURRENT	A/2-PHASE	0.9	2.4	2.4	2.4
WINDING RESISTANCE	Ω/2-PHASE	5.9	1.1	1.2	1.5
INDUCTANCE	mH/2-PHASE	2.6	0.5	0.8	1.0
HOLDING TORQUE	mN・m	70	140	210	280
	oz・in	9.9	19.8	29.7	39.6
DETENT TORQUE	mN・m	10	10	12	16
	oz・in	1.4	1.4	1.7	2.3
ROTOR INERTIA	g・cm²	20	42	60	85
	oz・in²	0.11	0.23	0.33	0.46
WEIGHTS	g	140	210	310	360
	lb	0.31	0.46	0.68	0.79
INSULATION RESISTANCE	————	500VDC 100MΩmin.			
DIELECTRIC STRENGTH	————	500VAC 50HZ 1 min.			
OPERATING TEMP. RANGE	℃	-10 to 50			
ALLOWABLE TEMP. RISE	K	70			

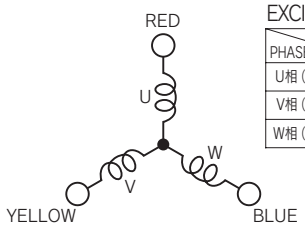
KT42JM1

■ DIMENSIONS unit = mm (inch)



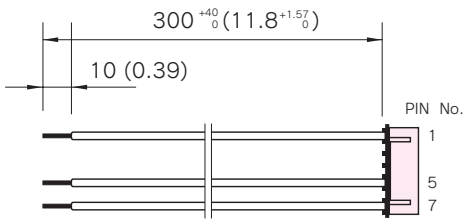
	TORQUE CHARACTERISTICS VS. PULSE RATE (FULL STEP) 24V 2 PHASE	TORQUE CHARACTERISTICS VS. PULSE RATE (MICRO-STEP) 24V 1/4 DIVISIONS	VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)
KT42EM1 -551			
KT42HM1 -551			
KT42JM1 -551			
KT42KM1 -551			

■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM1-551)



EXCITING SEQUENCE

PHASE \ STEP	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-



PIN No.	LEAD COLOR
1	RED
2	
3	
4	
5	BLUE
6	
7	YELLOW

3-Phase Hybrid Stepping Motor 3.75°

KT42 series *TRISYN*

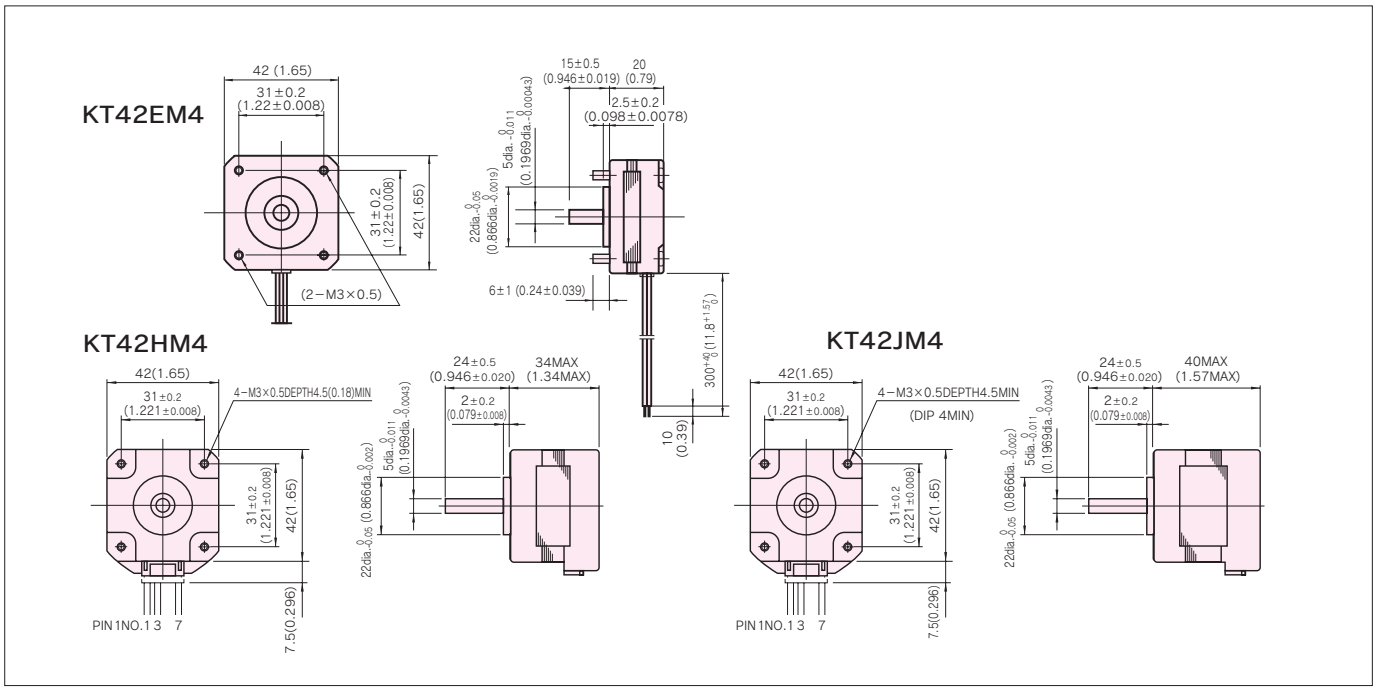
HIGH TORQUE, SILENT ROTATION

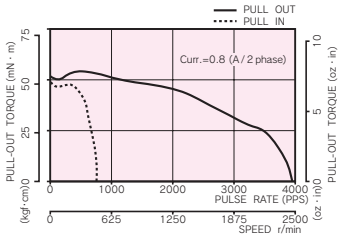
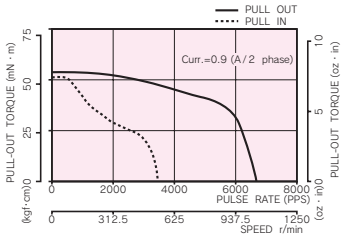
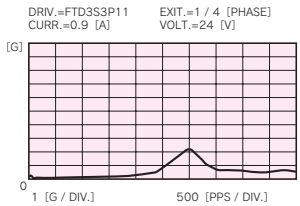
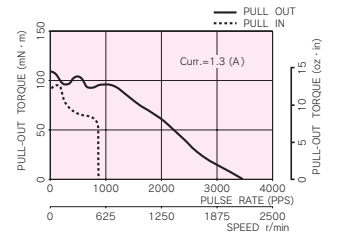
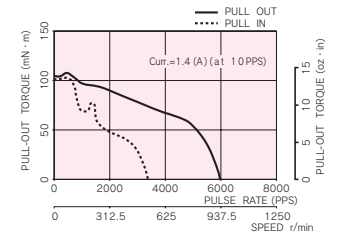
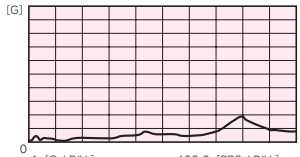
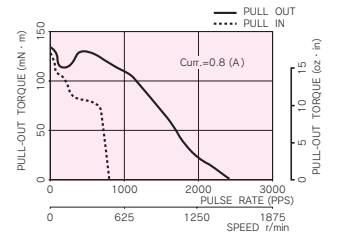
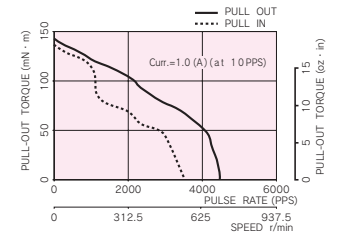
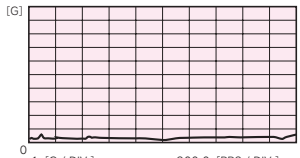
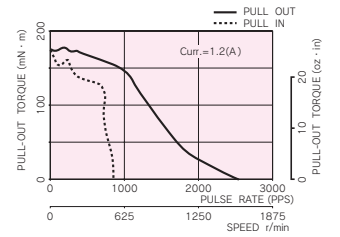
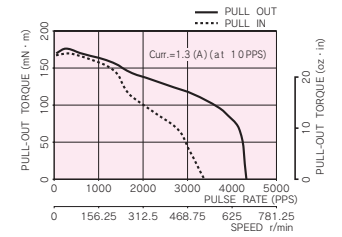
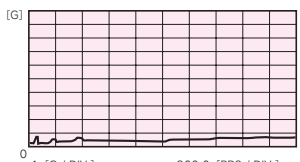
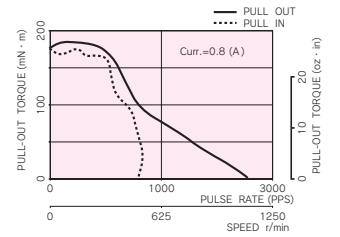
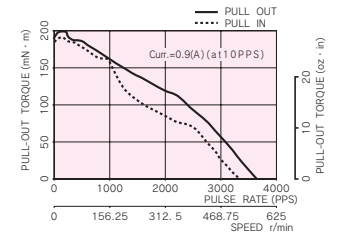
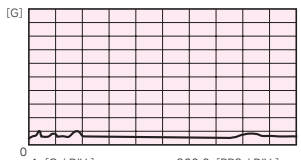
■ STANDARD SPECIFICATIONS

MODEL	UNIT	KT42EM4	KT42HM4		KT42JM4	
		-551	-551	-552	-551	-552
DRIVE METHOD	————	BI-POLAR				
NUMBER OF PHASES	————	3				
STEP ANGLE	deg./step	3.75				
VOLTAGE	V	5.28	4.42	7.04	5.16	8.8
CURRENT	A/2-PHASE	0.8	1.3	0.8	1.2	0.8
WINDING RESISTANCE	Ω/2-PHASE	6.6	3.4	8.8	4.3	11.0
INDUCTANCE	mH/2-PHASE	5.7	4.7	12.3	8.7	22.0
HOLDING TORQUE	mN・m	70	130	130	180	180
	oz・in	9.7	18	18	25	25
DETENT TORQUE	mN・m	8.8	14.7	14.7	19.6	19.6
	oz・in	1.3	2.1	2.1	2.8	2.8
ROTOR INERTIA	g・cm²	20	38	38	60	60
	oz・in²	0.11	0.21	0.21	0.33	0.33
WEIGHTS	g	140	210	210	240	240
	lb	0.31	0.46	0.46	0.53	0.53
INSULATION RESISTANCE	————	500VDC 100MΩmin.				
DIELECTRIC STRENGTH	————	500VAC 50HZ 1 min.				
OPERATING TEMP. RANGE	℃	0 to 50				
ALLOWABLE TEMP. RISE	K	70				

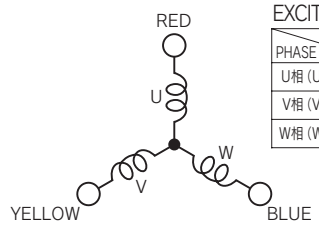
KT42JM4

■ DIMENSIONS unit = mm (inch)



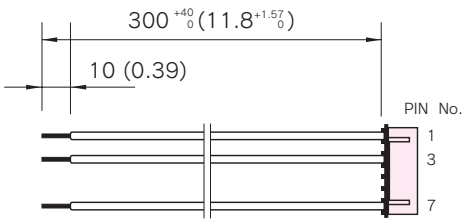
	TORQUE CHARACTERISTICS VS. PULSE RATE (FULL STEP) 24V 2 PHASE	TORQUE CHARACTERISTICS VS. PULSE RATE (MICRO-STEP) 24V 1/4 DIVISIONS	VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)
KT42EM4 -551			
KT42HM4 -551			
KT42HM4 -552			
KT42JM4 -551			
KT42JM4 -552			

■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM4-551)



EXCITING SEQUENCE

PHASE \ STEP	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-



PIN No.	LEAD COLOR
1	YELLOW
2	
3	BLUE
4	
5	
6	
7	RED

3-Phase Hybrid Stepping Motor 0.6°

KT42 series *TRISYN*

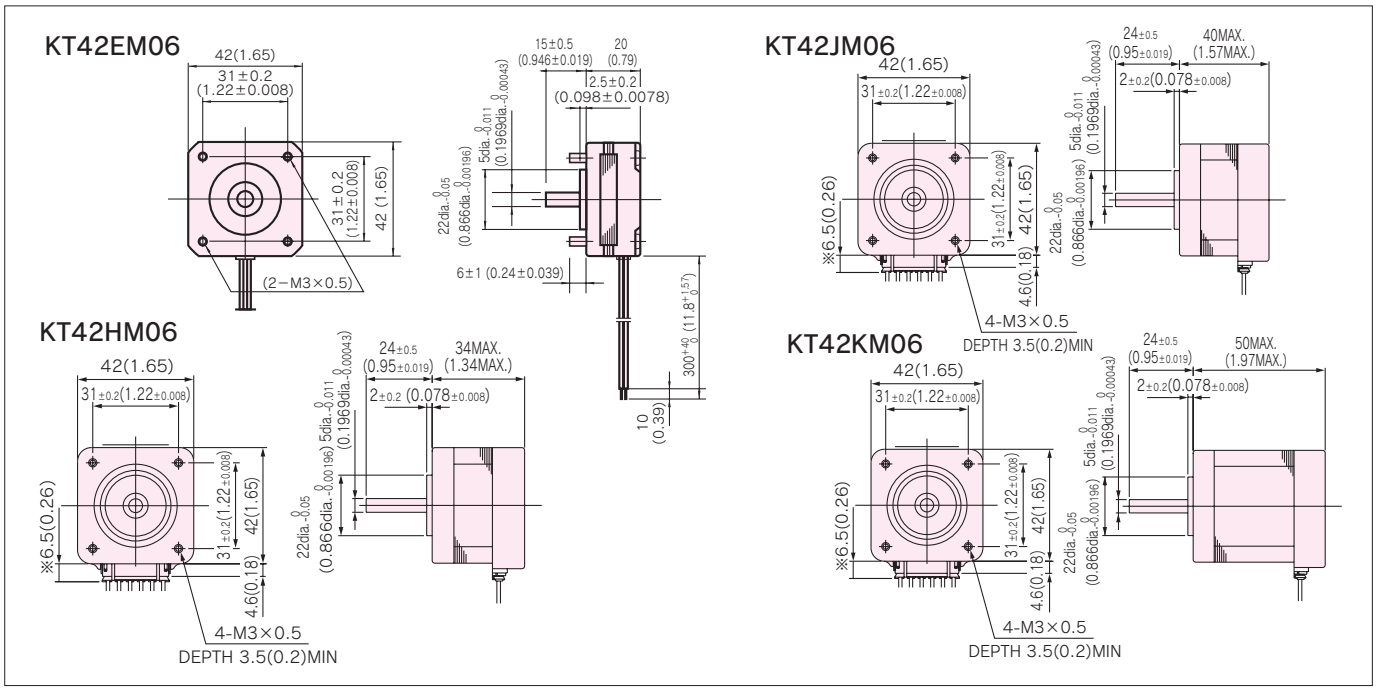
HIGH TORQUE, SILENT ROTATION

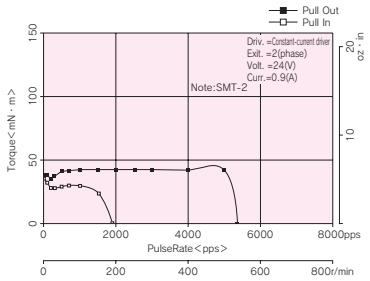
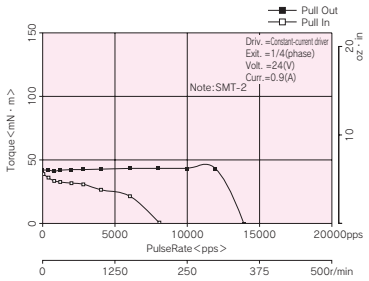
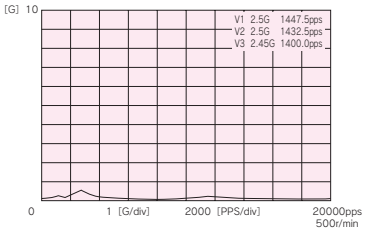
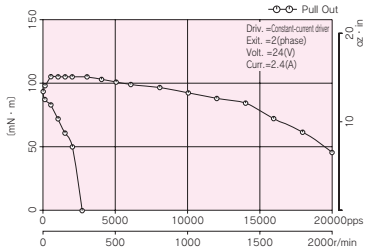
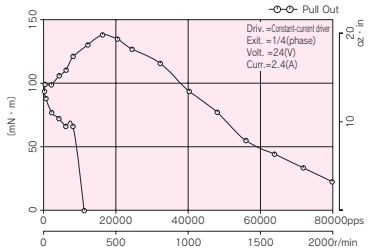
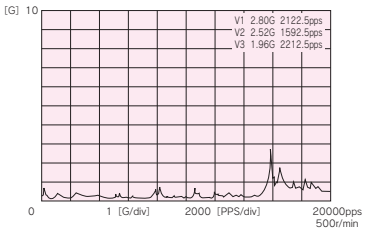
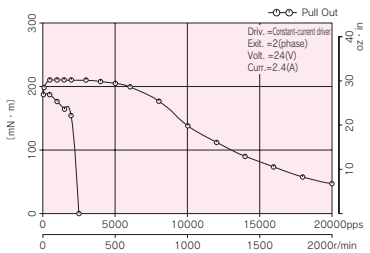
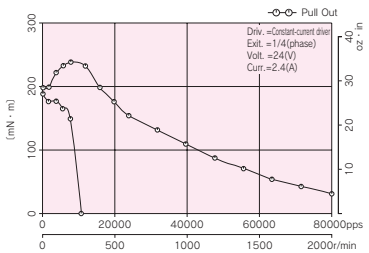
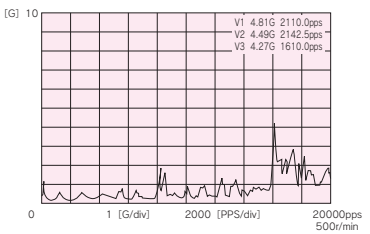
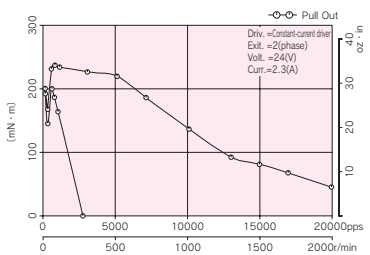
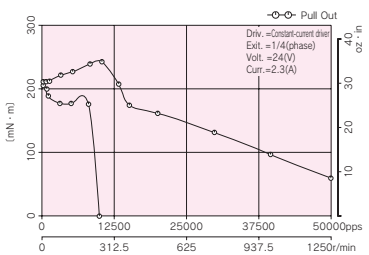
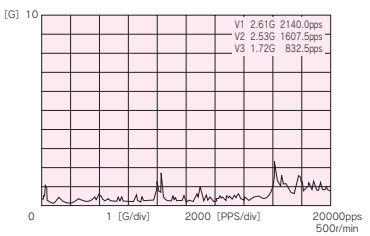
■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KT42EM06 -551	KT42HM06 -551	KT42JM06 -551	KT42KM06 -551
DRIVE METHOD	————	BI-POLAR			
NUMBER OF PHASES	————	3			
STEP ANGLE	deg./step	0.6			
VOLTAGE	V	5.3	2.88	3.12	4.6
CURRENT	A/2-PHASE	0.9	2.4	2.4	2.3
WINDING RESISTANCE	Ω/2-PHASE	5.9	1.2	1.3	2.0
INDUCTANCE	mH/2-PHASE	3.1	0.8	1.3	1.4
HOLDING TORQUE	mN・m	45	90	180	200
	oz・in	6.4	12.7	25.5	28.3
DETENT TORQUE	mN・m	10	6	8	9
	oz・in	1.4	0.8	1.1	1.3
ROTOR INERTIA	g・cm²	20	42	60	85
	oz・in²	0.11	0.23	0.33	0.46
WEIGHTS	g	140	210	310	360
	lb	0.31	0.46	0.68	0.79
INSULATION RESISTANCE	————	500VDC 100MΩmin.			
DIELECTRIC STRENGTH	————	500VAC 50HZ 1 min.			
OPERATING TEMP. RANGE	℃	-10 to 50			
ALLOWABLE TEMP. RISE	K	70			

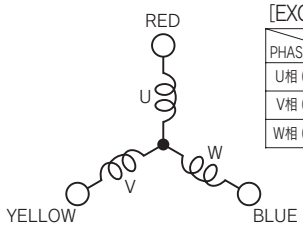
KT42JM06

■ DIMENSIONS unit = mm (inch)



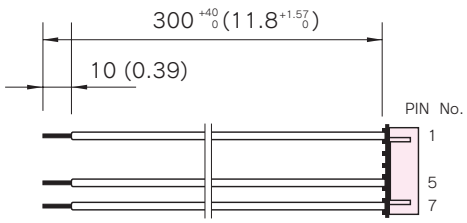
	TORQUE CHARACTERISTICS VS. PULSE RATE (FULL STEP) 24V 2 PHASE	TORQUE CHARACTERISTICS VS. PULSE RATE (MICRO-STEP) 24V 1/4 DIVISIONS	VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)
KT42EM06 -551			
KT42HM06 -551			
KT42JM06 -551			
KT42KM06 -551			

■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM06-551)



[EXCITING SEQUENCE]

PHASE \ STEP	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-



PIN No.	LEAD COLOR
1	RED
2	
3	
4	
5	BLUE
6	
7	YELLOW

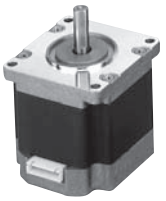
3-Phase Hybrid Stepping Motor 1.2°

KT60 series *TRISYN*

HIGH TORQUE, SILENT ROTATION

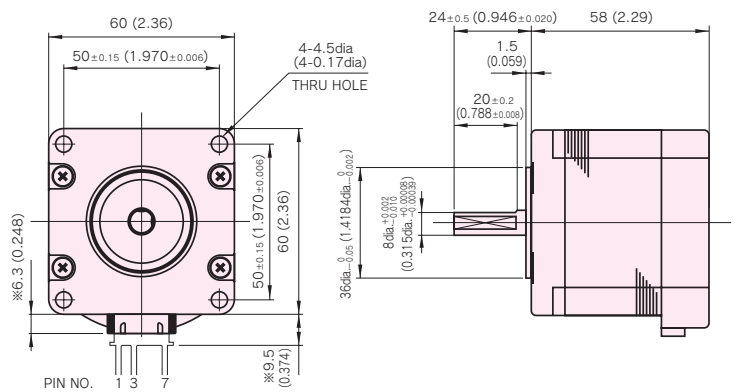
■ STANDARD SPECIFICATIONS

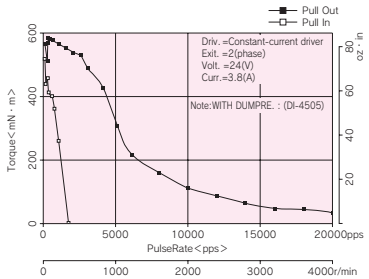
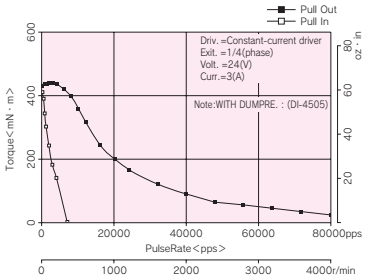
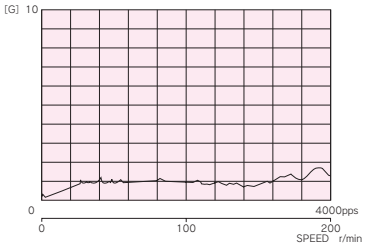
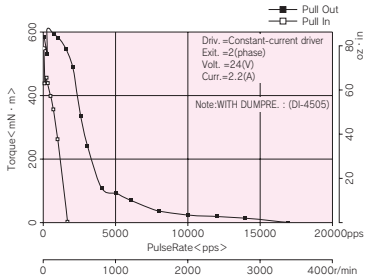
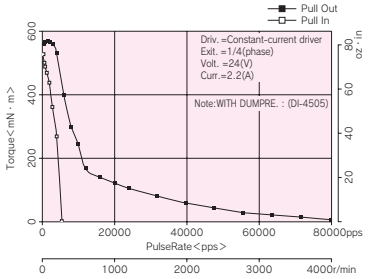
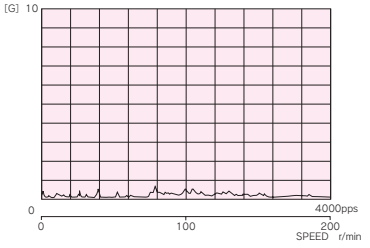
M O D E L	UNIT	KT60LM1	
		-551	-552
DRIVE METHOD	————	BI-POLAR	
NUMBER OF PHASES	————	3	
STEP ANGLE	deg./step	1.2	
VOLTAGE	V	2.77	4.84
CURRENT	A/2-PHASE	3.8	2.2
WINDING RESISTANCE	Ω/2-PHASE	0.73	2.2
INDUCTANCE	mH/2-PHASE	1.0	3.3
HOLDING TORQUE	mN · m	600	600
	oz · in	85	85
DETENT TORQUE	mN · m	35	35
	oz · in	5	5
ROTOR INERTIA	g · cm²	265	265
	oz · in²	1.45	1.45
WEIGHTS	g	720	720
	lb	1.6	1.6
INSULATION RESISTANCE	————	500VDC 100MΩmin.	
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.	
OPERATING TEMP. RANGE	℃	0 to 50	
ALLOWABLE TEMP. RISE	K	70	



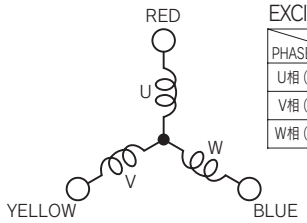
KT60LM1

■ DIMENSIONS unit = mm (inch)



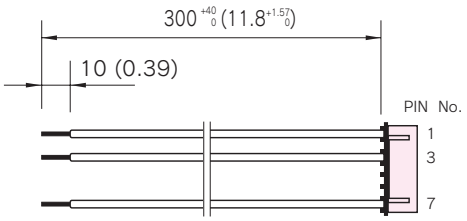
	TORQUE CHARACTERISTICS VS. PULSE RATE (FULL STEP) 24V 2 PHASE J:142g·cm² (0.78oz·in²)	TORQUE CHARACTERISTICS VS. PULSE RATE (MICRO-STEP) 24V 1/4 DIVISIONS J:142g·cm² (0.78oz·in²)	VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)
KT60LM1 -551			
KT60LM1 -552			

■ CONNECTION CABLE TO MOTOR unit = mm (inch)



EXCITING SEQUENCE

PHASE \ STEP	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-



PIN No.	LEAD COLOR
1	YELLOW
2	
3	BLUE
4	
5	
6	
7	RED

3-Phase Hybrid Stepping Motor 1.2°

KT60 series *TRISYN*

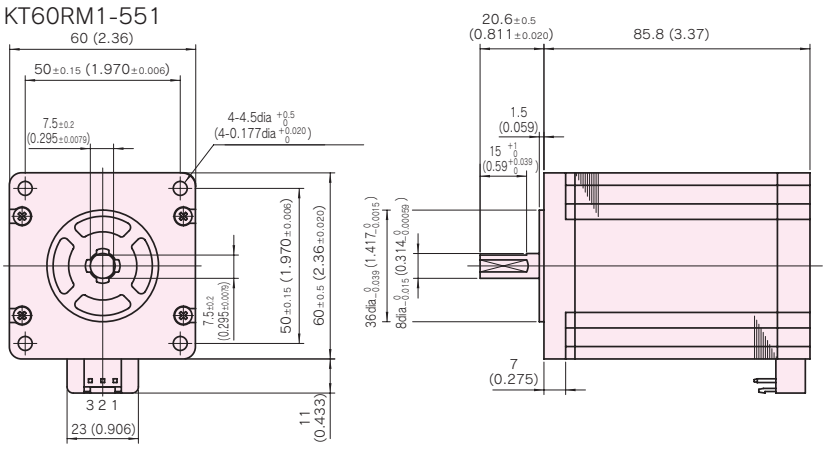
HIGH TORQUE, SILENT ROTATION

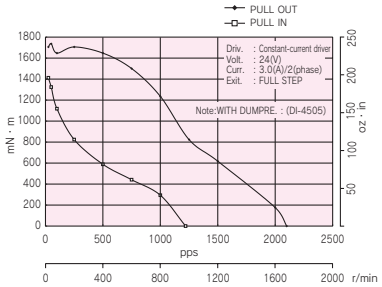
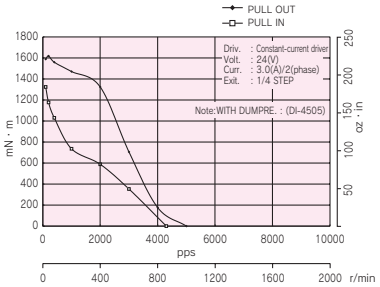
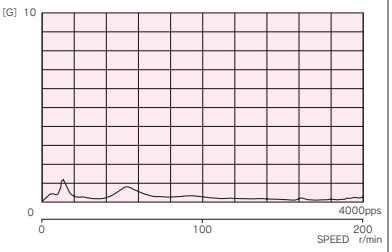
■ STANDARD SPECIFICATIONS

M O D E L	UNIT	KT60RM1-551
		-551
DRIVE METHOD	————	BI-POLAR
NUMBER OF PHASES	————	3
STEP ANGLE	deg./step	1.2
VOLTAGE	V	6.0
CURRENT	A/2-PHASE	3.0
WINDING RESISTANCE	Ω/2-PHASE	2.0
INDUCTANCE	mH/2-PHASE	3.2
HOLDING TORQUE	mN · m	1680
	oz · in	238
DETENT TORQUE	mN · m	125
	oz · in	17.7
ROTOR INERTIA	g · cm²	840
	oz · in²	4.6
WEIGHTS	g	1340
	lb	3.0
INSULATION RESISTANCE	————	500VDC 100MΩmin.
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.
OPERATING TEMP. RANGE	℃	-10 to 50
ALLOWABLE TEMP. RISE	K	80

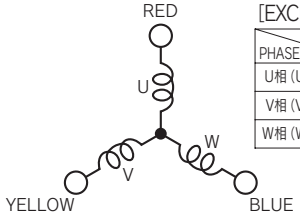
KT60RM1

■ DIMENSIONS unit = mm (inch)



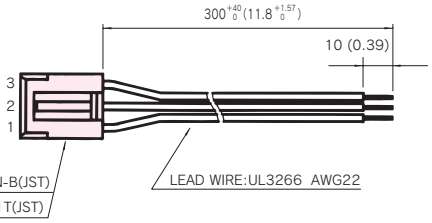
	TORQUE CHARACTERISTICS VS. PULSE RATE (FULL STEP) 24V 2 PHASE J:142g·cm² (0.78oz·in²)	TORQUE CHARACTERISTICS VS. PULSE RATE (MICRO-STEP) 24V 1/4 DIVISIONS J:142g·cm² (0.78oz·in²)	VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)
KT60RM1 -551			

■ CONNECTION CABLE TO MOTOR unit = mm (inch)



[EXCITING SEQUENCE]

STEP / PHASE	1	2	3	4	5	6
U相 (U PHASE)	+		-	-		+
V相 (V PHASE)	-	-		+	+	
W相 (W PHASE)		+	+		-	-



PIN No.	PHASE	LEAD COLOR
1	U	RED
2	V	YELLOW
3	W	BLUE